



Frog Street Pre-K Research Foundation

Frog Street Pre-K is a comprehensive curriculum based on the most current research in early childhood education including brain development research. The program is rooted in a deep knowledge of child development and empowers teachers to know not only what to teach but also the how and why of instructional strategies. The foundation of the program includes five cornerstones:

- Integration of Themes, Disciplines and Learning Domains
- Social and Emotional Development
- Differentiated Instruction
- Equity of English and Spanish Instruction and Materials
- Child-Centered Approaches toward Learning

This paper summarizes the research used to develop the instructional strategies in Frog Street Pre-K .

Integration of Themes, Disciplines and Domains

Themes:

Frog Street Pre-K was specifically designed to meet current early childhood standards within the learning disciplines. A series of nine themes provides instruction for ten domains: Social and Emotional Development, Language and Literacy, Mathematics, Science, Social Studies, Fine Arts, Physical Development, Social Studies, and Technology. Because the brain learns through patterns and connections, a thematic approach is best suited for our younger learners (Sousa 2008). Research has consistently shown that children in integrated programs demonstrate academic performance equal to, or better than, children in discipline-based programs. In addition, children are more engaged in school, and less prone to attendance and behavior problems (Drake & Reid, 2010.) Children learn by active engagement with their environment and through social engagement with other human beings. Multiple complex and concrete experiences are essential for meaningful learning and teaching (Caine & Caine, 1991). The nine themes in Frog Street Pre-K and the instruction contained therein provide these experiences.

Early Literacy:

Early literacy plays a key role in enabling the kind of early learning experiences that research shows are linked with academic achievement, reduced grade retention, higher graduation rates and enhanced productivity in adult life (Strickland, Riley-Ayers, 2006). Frog Street Pre-K recognizes the importance of language as both a social and academic function. The social aspect will be addressed in the section on Social and Emotional Development. The academic areas of early childhood literacy in Frog Street Pre-K include: *phonological awareness; alphabet knowledge; oral language and vocabulary; comprehension and written expression.*

Phonological Awareness is a key indicator of how successful students will be with later literacy development. Phonological awareness is considered to represent an umbrella term that includes children's sensitivity to, and capacity to manipulate, sounds within spoken language at varying levels of linguistic complexity, from the whole word to the phoneme (National Early Literacy Panel, 2008). Children engaged in the Frog Street Pre-K curriculum become aware of how words work in sentences and how sounds work in words. They identify and manipulate parts of spoken language; including words, syllables, beginning sounds, rhyme, onset and rime, as well as individual phonemes. Strategic lessons are provided in Morning Message that support intentional instruction in this carefully sequenced progression of skills.

Alphabet Knowledge is defined specifically as the recognition and the production of the names and sounds of letters. Knowledge of the alphabet upon kindergarten entry is a strong predictor of later reading success (Adams 1990; National Research Council, 1998; Whitehurst, Lonigan 2001). Pashler (2006) details how to optimize memory or learning sets of information and overcoming obstacles to forgetting. He suggests the optimal review cycle to remember a set of items, such as alphabet letter names and alphabet letter sounds should follow a distributed practice and be reviewed every 18 to 36 days. Frog Street Pre-K provides a detailed scope and sequence of intentional instruction for letter naming and letter sounds based on learning letter names and subsequent sounds through six different "advantages" (Justice, Pence, Bowles & Wiggins, 2006):

- *Own-Name Advantage* (where letters occur in children's names)
- *Alphabetic order* (where letters are taught in alpha order)
- *Letter pronunciation effect* (where the sound of the letter is also in the name)
- *Letter frequency effect* (letters that occur most frequently in written language)
- *Consonant Phoneme Acquisition order effect* (order of sounds the child first learns to articulate in oral language.
- *Letter Writing Advantage* : (where explicit letter formation is taught and practiced)

Frog Street Pre-K Letter Knowledge instruction guides children to identify the letters in their own name and the names of their friends in Theme 1. Themes 2 and 3 introduce letters children first learned to speak. Letters are presented in groups of three or four each week because this increases the effectiveness of letter learning (McGee, 2007) and include two letters that will be visually similar, thus easily confused by younger learners. Children store their recognition of letters in higher regions of the brain when they are presented with a set of three letters that they can compare and contrast. Theme 4 addresses letters that have their typical sound embedded in the name of the letter. Theme 5 uses the alphabetic approach with a focus on upper and lower case letters. Themes 6 and 7 use the letter frequency approach focusing on those letters used most often in print, and Themes 8 and 9 focus on letter writing which couples the motor memory of writing a letter with remembering the name and sound. This combined approach optimizes learning and memory of alphabetic concepts.

Instructional activities that support the research include Morning Message, Literacy Small Group, and Literacy Practice Centers as well as strategies for Letter Walls, Multi-sensory Letter Writing, English Language Learner Strategies, and Spanish Literacy development.

Together, considerable evidence suggests that Phonological Awareness and Alphabet Knowledge intertwine to allow children to comprehend the basic idea of the alphabetic principle, learn the regularities of the associations between sounds and letters, and apply these words in print (Ehri, 2002; Phillips & Torgensen, 2006; Share, 1995).

Oral Language and Vocabulary is a critical area of Frog Street Pre-K based on research that indicates the size of a child's vocabulary in kindergarten is a key predictor of reading success (Scarborough 2001). Furthermore, research shows that gaps in vocabulary are most successfully addressed during the preschool years (Biemiller, 2006; Cunningham, 1997). When children develop vocabulary, they use words to communicate effectively for speaking and understanding. The growth of vocabulary occurs through conversations with peers and adults as well as through intentional instruction associated with themes, books and lessons. Frog Street Pre-K utilizes strategies to contextualize targeted vocabulary which allow students to develop both receptive and expressive vocabulary. Words are first introduced within the context of a story or activity, and then are used in decontextualized situations within the classroom so that students learn to apply newly acquired vocabulary to new situations. Visual cues are critical to the instruction of vocabulary in the pre-k classroom. Frog Street utilizes richly illustrated books, full color photograph books, Photo Activity Cards, Pocket Photos, Picture Vocabulary Cards and Story Folder Props to provide a resources for vocabulary instruction that includes both direct instruction on targeted words and direct instruction of strategies for vocabulary acquisition (National Early Literacy Panel, 2008).

Comprehension skills and strategies form the basis of all future reading success. Children in preschool develop their comprehension skills through experiences that promote oral and written language skills, such as discussions, play activities, retellings, and emergent readings (Dickinson and Tabors, 2001). Frog Street Pre-K provides students with many rich opportunities to develop and practice comprehension. Daily Read Aloud Time provides teachers with intentional instruction in activating prior knowledge, questioning, dramatic expression and other critical comprehension strategies. Children have many opportunities to retell stories through role-play, magnetic story props, and sequence cards. These materials support the scaffolding of the child's attempts to retell a story through the use of concrete props. In addition, Frog Street Pre-K uses graphic organizers (T-charts, Venn diagrams, Word webs) to provide for deeper processing of key vocabulary and its relationship to comprehension (Coyne, Simmons & Kame'enui, 2004).

Written Expression for the preschool child develops in conjunction with early reading skills (Roskos, Christie, & Richgels, 2003). "Incorporating writing into your daily schedule is essential to supporting children's emergent literacy development" (Benson, 2004). Instruction in Frog Street Pre-K allows children to develop an understanding of the purpose of writing and its relationship to reading. Morning Message provides a daily opportunity for modeled writing, and throughout each day there are opportunities for shared writing and for children to practice their own writing skills as they draw and illustrate, write notes, maintain journals, create books, label pictures and much more. The development of writing skills is supported through scaffolding of instruction during small group instruction and practice center time. Thematic written expression activities incorporate real life experiences (Reagan's Journal, Theme 8 – Insect Journals.)

Mathematics:

Frog Street Pre-K provides purposeful, engaging mathematical investigations and activities that build upon children's informal understandings of patterns, number, measurement and shape. The knowledge and skills that children will learn can be summarized in relationship to the critical content domains recommended by the National Council of Teachers of Mathematics.

Number and Operations for preschool children includes the understanding of quantity and numerical relationships (Fuson, Grandau, Sugiyama; 2001). Frog Street Pre-K provides opportunities for children to correspond the verbal counting sequence with one-to-one correspondence with sets of concrete, pictorial, and auditory collections. In addition, children develop strategies for naming, combining, separating, and comparing quantities and quantifying data. These skills are necessary for success in later mathematics instruction (Griffin, 2003).

Geometry and Spatial Awareness includes understanding shape, location and spatial transformations. In Frog Street Pre-K children learn to recognize attributes of two and three dimensional shapes and to understand how shapes are alike and different. Preschool children enjoy manipulating shapes and their intuitive knowledge of shape often exceeds their knowledge of number (NCTM, 2000). Through daily intentional mathematics instruction, Frog Street Pre-K relates this intuitive knowledge to academic vocabulary and concepts that will form a firm foundation for the student as they enter kindergarten.

Measurement in the pre-K classroom means that children can quantify and compare space, length, weight area and volume using terms such as longer, shorter, heavier, wider and fuller. Children at this age will begin to compare and measure using non-standard as well as standard basic units. The use of non-standard units helps children to connect quantity (number) to measurement (Clements and Sarama, 2009). As this relationship solidifies, it is also beneficial for students to start using uniform standard units to continue exploration of measurement (Clements, 2003).

Classification and Patterning concepts involve sorting, grouping and repeating a pattern within a core of objects. Frog Street Pre-K will guide children to identify, extend and create repeating patterns. These activities have been shown to increase number awareness, counting strategies and problem solving as well as helping children develop the foundations for algebraic thought (Copley, 2000).

Data Collection and Analysis in the pre-K classroom involve children building the foundations of data collection and analysis as they describe, sort, and compare physical and mathematical characteristics such as size, quantity or shape. The skills developed here lead to greater competencies in the later grades (Copley, 2000).

Developmental Learning Domains:

Frog Street Pre-K provides a carefully crafted program of intentional instruction in five domains: physical development, social and emotional development, cognitive development, language development and approaches to teaching. Children are exposed to varied activities from each domain each day, providing the best learning environment (Schiller, 2001). Physical activities are built into the instructional day and social and emotional needs are addressed through classroom routines, child centered activities as well as explicit instruction.

Frog Street Pre-K utilizes a variety of teaching approaches including small groups, individual activities, cooperative strategies and whole group routines. In addition, a variety of modalities are addressed through music, movement, problem solving, and interactive activities. This ensures all children get a chance to experience the curriculum in a variety of ways which in turn leads to greater mastery of concepts (Scott, et al, 2010).

Social and Emotional Development

At the heart of Frog Street Pre-K is Conscious Discipline™ (Becky Bailey, 2001), a program that develops social and emotional intelligence. Children learn best in an environment where they feel safe and free from stress (Jensen, 2005, Sousa, 2005). This is particularly true for the preschool classroom because the optimum window for children to wire for social and emotional intelligence is between birth and four (Ramey and Ramey, 1999.) Daily routines such as Greeting Circle, Kindness Tree and the Celebration Center are just a few of the ways that children learn to share emotions appropriately with peers and teachers. Children can see appropriate behavior strategies modeled throughout each instructional day and are encouraged to share Conscious Discipline strategies, songs and rituals with their family at home. The Family Connections CD provides many take home resources for this purpose.

A full research study on Conscious Discipline can be found [here](#).

Differentiation of Instruction

In order to meet the diverse needs of the learners in the Pre-K classroom, Frog Street provides options for English Language Learners, Special Needs students as well as advanced learners. Differentiation of instruction recognizes and responds to student differences in readiness, interests and learner profiles. Frog Street provides for small group instruction which allows teachers to teach within each child's optimal learning level, or "zone of proximal development" (ZPD) (Vygotsky, 1978). ZPD is based on the understanding that learning will not occur at its optimal level if children are not challenged enough (Tomlinson et al., 2003) or if they are over-challenged and frustrated (Kapusnick & Hauslein, 2001). Recommendations for adapting the instruction to meet the needs of the small group are available in the Frog Street Teacher Guides at point of use. Teachers are given simple tools to monitor student progress so that instruction can be flexible as the learner's needs change. Materials such as the Developmental Storybook and Strategy Cards provide appropriately leveled instruction for students in the Frog Street classroom. Learning Center adaptations are at point of use in each teacher guide to meet individual needs. *Adaptations for Young Learners* Teacher Guide targets forerunner skills in Literacy and Mathematics for children needing such skills.

Equity of Materials and Instruction in English and Spanish

A bilingual or dual language classroom must have access to equitable materials in both languages in order to be successful. "Bilingual education" is the use of two languages as media of instruction for a child or a group of children in part or all of the school curriculum (Cohen, 1975). It is also acknowledged that it is impossible to totally separate language and culture. Therefore, the term bilingual education

includes the concept of bicultural education (Ovando & Collier, 1985). Frog Street Pre-K provides all teacher dialogue and instructional materials in both English and Spanish. Literature and oral stories feature adaptations from English into Spanish rather than a direct translation in order to preserve the instructional content. Many stories originated in Spanish and were sensitively adapted into English. In addition, the curriculum features authentic stories from Hispanic culture by authors, Isabel Campoy and Alma Flor Ada. The Cultural Rhymes Flip Book is a resource to celebrate the various rhymes and chants from nine cultures. Research has shown that there is a clear link between appropriate bilingual materials and curriculum and children academic achievement (Oakes & Saunders, 2002). Children in the bilingual Frog Street Pre-K classroom will be well positioned for future success in school.

Child Centered Approaches Toward Learning

According to Webster, joyful means “experiencing well-being, success, or good fortune.” Frog Street Pre-K teacher training and resources encourage child-centered approaches that foster learning opportunities based on brain development research and best practices in early childhood. Daily activities allow children to explore, create and play within the framework of the curriculum. These practices have been shown to increase achievement as well as to increase social and emotional competence AND a sense of well-being.

Definitions of high-quality preschool settings often include characteristics of the adult–child interactions, such as sensitivity and stimulation, e.g., responsiveness to the children’s needs and signals, positive affect, and frequent verbal and social interaction. Factors important for school readiness also include the amount of time being read to, one-to-one teaching interactions, engagement with functional and environmental print, use of well-planned lessons, and incorporating materials in play that promote literacy, math, and science in play settings. In addition, other significant factors described as key for an effective learning environment include the physical setup and richness of a child’s classroom.

Learning is inhibited when children do not feel emotionally safe (Jensen, 2005, Sousa, 2005, Goleman, 1998.) Frog Street Pre-K offers specific social interactions and daily routines to encourage a foundation of safety and caring.

Children learn better in smaller spaces (Epstein, 2007); this practice is supported in Frog Street Pre-K with small group instruction and learning centers. When children are offered choices, especially about learning activities, they feel more positive about their work and, at the same time, they feel less anxiety. Choices allow learners to reach self-determined goals, sparking and maintaining children motivation, which is critical to learning (Schiller, 1999.) Adult-child verbal and social interactions are encouraged through reciprocal exchanges in dialogue and are referenced in Frog Street Pre-K lessons through Read Aloud, Literacy and Math Small group and Learning Center Reflect questions.

A brain smart learning environment is encouraged in Frog Street Pre-K with suggestions for transitions, scheduling and room layout. Too much stimuli is overwhelming to everyone but especially to young children who are not as skilled at determining which stimuli to accept and which to reject. Less is more visually but less is also more when it comes to amount of information. Working memory must process the information that is allowed into the brain. It has a limited capacity. For children younger than five it is an average of two items and for children between five and fourteen it is an average of five (Cowan,

2001). This means that when providing new information to children we must again be careful not to over stimulate (Perry, 2001.)

Frog Street Pre-K curriculum encompasses a wide body of research-based practices and brain based research to encourage the social and emotional, physical, language and cognitive development of a child.

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