

The Brain and Early Childhood

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The Brain and Early Childhood

We encouraged teachers to get together in small groups and look at new information from the sciences, examine educational research, and study the brain-mind principles—as people, not just as teachers. They asked questions like “What does it mean that the brain is a complex, dynamic system?” Then they began to reflect on how their own practices did (or did not) maximize learning.

—From “Maximizing Learning: A Conversation with Renate Nummela Caine,” by Carolyn R. Pool, *Educational Leadership*, March 1997, p. 11.

The human brain weighs less than three pounds and resembles a soft wrinkled walnut. Despite its most peculiar appearance and relatively light weight, the brain has kept us in awe of its capacity and capability for centuries. Some of the mysteries surrounding the brain have been unveiled. Due to neuroscientists’ recent research, a growing body of knowledge and understanding about the brain has evolved over the past decade. We have information, for example, about the structures of the brain, how emotion is processed by the brain, circumstances under which the brain grows, and how and when the brain changes over a life span. We know that the most rapid period of growth for the brain is from birth to age 10. We also know that each brain is unique.

New discoveries about the brain and learning have engaged the interest of educators such as Pat Wolfe, Renata Caine, Robert Sylwester, and others who believe that the more knowledgeable we become about the brain, the better able we will be to influence learning. Their work explores the implications of the new brain research for teaching and learning.

During the early childhood years, the architecture of the brain is most vulnerable to change. Parents and educators of young children share the common desire to maximize the growth and development of the children in their “charge.” Educators and parents want to provide optimal learning opportunities for their young children to ensure them a strong foundation so that they can ultimately fulfill their potential and become lifelong learners.

The field of brain research and the myriad ways in which it can inform parenting and educational practices is still young. We are cautioned by neuroscientists to be conservative in applying the information about the brain to teaching and learning; at the same time, educators and parents are encouraged to reflect on their practices in light of the new knowledge. These are very exciting times for parents and educators of young

children. Although educators and parents should move forward cautiously, they should not be too hesitant. The commitment made by educators, parents, and childcare providers of young children is to a continuous process of enriching, extending, and increasing their children's opportunities for learning.

Assumptions

There is a compelling need to know and apply research about the brain.

The body of research about the brain is growing exponentially. New developments are helping us understand the teaching and learning process in new ways. We are just beginning to realize how much of our behavior is innate and how much is learned. We may soon realize that much of what has been traditionally taught in schools was necessary only because the skills developed were needed before machinery was invented to do those tasks. We need to discern what skills and knowledge are needed for the next century. How we teach our children and what we teach our children must reflect this research. Homes, child care, preschool settings, and schools must support the continuous development of young children.

Parenting, teaching, and learning has become more complex as our knowledge about early childhood development, the brain, and quality educational practices has increased and changed. This change in our knowledge base is further complicated by both our anticipated and not yet known needs for a 21st century world that is increasingly information rich and technologically sophisticated. Parents and teachers must consistently reflect on how to provide an enriched and appropriate learning environment that supports the continuous growth and development of each child to his or her full potential.

Conversation is a major means of learning for parents and educators, just as it is for children.

When we talk with others about learning and teaching beliefs and practices, we clarify and deepen our thinking and catalyze action. Conversation is not a frill but rather a tool for learning. Dialogue and conversations among adults enable us to think about how we think—and change how we think and what we do.

Teaching and learning changes when all educators of young children, including parents, teachers, and child care providers, reflect on and apply brain research.

Educators must also be continuous learners. To be effective facilitators of learning in young children, all educators actively seek to deepen their un-

derstanding of how young children learn and develop—and to apply the new knowledge to their teaching opportunities with young children. Reflective educators examine their practices in light of new information and ask themselves How can I extend and improve my present teaching practices?

It is the responsibility of parents, educators, and child care providers to collaborate in order to support and extend the learning of the young child.

When all the educators in a young child’s life collaborate, the emotional needs of the child are better met. Emotions have a significant role in the learning process because they drive attention, which drives learning and memory. Collaboration also increases opportunities for continuity between the learning environments and learning experiences of a young child, which helps to ensure that the process of learning is meaningful.

The purpose of the videotape series is to assist schools, teachers, parents, child care providers, and individuals who provide services to young children and their families in using information about the brain to facilitate the growth and development of the young child. This series can be easily incorporated into preservice and inservice seminars for teachers, teaching assistants, and child care providers-in-training; it can introduce them to information about the brain and learning or assist them in reflecting, refining, and revising their practices. The videotapes will also interest parents—their child’s first and most important teacher—who can explore how their child’s brain grows and develops, how they can enhance this process, and how they can expand their parenting repertoire. The program can also introduce principals, curriculum developers, and supervisors to how the brain functions and implications for practice in the field of early childhood.

This two-tape series is designed to provide educators, parents, and child care providers of young children (ages 0–8) with information about research on the brain and the implications for teaching and learning.

- Tape 1, *A Mind of Their Own*, explains the recent research about how the brain works and factors that influence its growth and development.

Purpose of the Series

About the Series

- Tape 2, *The Act of Learning*, examines the importance of providing a continuum of developmentally appropriate educational experiences for young children, with a focus on play as a brain-compatible teaching and learning tool.

Series Objectives

By the end of this series, participants will be able to

- Use basic information about how the brain functions and consider its implications for teaching and learning during the early childhood years.
- Understand the central roles that play and the learning environment have in young children's development and the relationship of brain research to these roles.
- Comprehend the importance of environment and brain function in the developmental continuity of learning experiences.

Use of the Facilitator's Guide

This *Facilitator's Guide* is designed to extend the video experience and to promote the application of our understanding of how the brain functions in a variety of early childhood settings. The guide offers ideas for workshops, follow-up and extension activities, and selected readings to extend and refine understandings about the brain. Collectively, the videotape and guide offer a variety of ways in which to build both individual and organizational understanding about the brain and increase the capacities of parents, child care providers, and teachers to educate young children.

The workshops are organized and presented in a manner that is consistent with our current understanding of how the brain learns. Each workshop allows participants to first focus their attention on the main topic of the videotape and workshop. Research indicates that attention drives learning. By orienting participants to the topic, this workshop helps the brain focus and access prior knowledge of the topic.

This strategy, together with the graphic organizers used throughout the workshops, helps the brain to know what to pay attention to during the learning experience. The workshops allow for personal reflection and the sharing of individual thoughts and experiences related to key points. This meaningfully engages participants in the content of the workshop—and the brain acquires new information when it perceives that it has meaning.

During the introductory segment of the agenda, participants have an opportunity to introduce themselves to this community of learners. Being a member of a community with common concerns and interests helps to create a safe, nonthreatening environment—a prerequisite for brain growth and learning. Time is allocated throughout the workshops for structured conversations and some activities that involve physical movement. These brain-compatible learning strategies facilitate the processing of information and the construction of new knowledge and understanding. As participants experience the workshop activities, they will gain a better understanding of the value of using brain-compatible strategies for teaching and learning. For young children in the early stages of development, many of these strategies are inherent to play and can be applied in a developmentally appropriate learning environment that is organized and facilitated by parents, preschool and primary teachers, or child care providers. At different points in the workshop, the participants will consider ways in which they can implement brain-compatible learning strategies in their own settings with young children.

This guide contains four sections:

Introduction. This presents an overview of the philosophy, principles, and research pertaining to the brain, learning, and early childhood education.

Workshops. These provide the agenda, materials list, and necessary information for the facilitator to organize and hold the workshops.

Handouts and Overheads. These are the materials to be duplicated and distributed to workshop participants. Camera-ready masters for overheads are also included.

Readings and Resources. These include articles related to the topics of brain research, brain-compatible learning, and early childhood education. The articles can be copied and distributed to participants, and several are incorporated in workshop activities. References and a resource list are also included.

Your role as a facilitator is to create a safe and stimulating environment that invites participants to become involved in learning about brain research and its relationship to early childhood development. You will want to explain to participants that they will have a chance to use brain-compatible learning strategies that include thinking about what they are learning and engaging in conversations with other participants. These ex-

Role of the Facilitator