

# Facilitator's Guide

HOW THE  
**Brain Learns**  
THIRD EDITION

David A. Sousa

**HAWKER BROWNLOW**  
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E D U C A T I O N

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# Introduction

## How to Use the Guide

This facilitator's guide is a companion for *How the Brain Learns*, Third Edition, by David A. Sousa. It is designed to accompany the study of the book and provide assistance to group facilitators, such as school leaders, professional development coordinators, peer coaches, team leaders, mentors, and professors. Along with a summary of each chapter in the book, David A. Sousa has provided supplemental information, chapter discussion questions, activities, and journal writing prompts. Special thanks to Jessica Inlow, a teacher of the gifted in the Baldwin County, Alabama, Schools for her valuable contributions to this guide.

When using the guide during independent study, focus on the summaries and discussion questions.

For small study groups, the facilitator should guide the group through the chapter work.

For small or large group workshops, the facilitator should create an agenda by selecting activities and discussion starters from the chapter reviews that meet the group's goals, and guide the group through the learning process.

## Additional Resources for Facilitators

Corwin Press also offers a free 16-page resource titled *Tips for Facilitators*, which includes practical strategies and tips for guiding a successful meeting. The information in this section describes different professional development opportunities, the principles of effective professional development, some characteristics of an effective facilitator, the responsibilities of the facilitator, and

practical tips and strategies to make the meeting more successful. *Tips for Facilitators* is available for free download at the Corwin Press website ([www.corwinpress.com](http://www.corwinpress.com), under "Extras").

We recommend that facilitators download a copy of *Tips for Facilitators* and review the characteristics and responsibilities of facilitators and professional development strategies for different types of work groups and settings.

# Chapter-By-Chapter Study Guide: *How the Brain Learns*, Third Edition

## Introduction

### Summary:

- Brain imaging technologies, such as EEG, MEG, PET, fMRI, and fMRS, have enhanced our ability to see how the brain functions when performing specific tasks. Some of the findings from studies using these instruments have implications for educational practice.
- This book discusses brain research that relates to teaching and learning and suggests ways that the research can be translated into what educators do in schools and classrooms.
- The book should be useful to classroom teachers, staff developers, principals, college instructors, and parents as they work to help children learn.
- Action research is a valuable method for determining the effectiveness of new strategies and of those already in use, and for providing teachers with feedback for self-evaluation. Action research can be the work of just one teacher, but its value grows when it is the consistent effort of a teacher team, department, school staff, or an entire district.

### Discussion Questions

1. What major advancements in the study of the human brain have led to the explosion of new information on how it works?
2. Why should teachers care about brain research?
3. What teaching strategies do you think would lend themselves well to action research in your school or classroom?

## Activities

### ● *What Do You Already Know?*

**Time:** 20 minutes

**Materials:** *How the Brain Learns*, Third Edition, by David A. Sousa

Have the participants individually complete the 10 true-false questions on page 12. Start a short discussion on why teachers answered the way they did, but avoid agreeing on a correct answer. The answers to these questions are scattered throughout the book at the appropriate place in the text.

### ● *How Brain Compatible Is My Teaching/School/District?*

**Time:** 20 minutes

**Materials:** *How the Brain Learns*, Third Edition, by David A. Sousa

Have the participants individually complete the instrument on page 13 by circling their responses. Then ask them to connect the circles from top to bottom to get a visual profile. Organize the participants in pairs and have them discuss their results with their partners.

**Journal Writing:** What action should I take, if any, to address those items with scores of 1 and 2? What can I do to maintain those items with scores of 4 and 5?

### ● *Understanding Action Research*

**Time:** 35 minutes, with reading

**Materials:** Chart paper, markers, masking tape, *How the Brain Learns*, Third Edition, by David A. Sousa

Ask the participants to read pages 9 to 11 before starting this activity. Organize them in groups of four to five. The group size will depend on the number of participants. Ask them to review at their table the six steps in the Action Research Cycle (Figure I.1). Their task is to select a teaching strategy that they could use in an action research project in their classroom or school.

On the chart paper they draw six large boxes similar to Figure I.1 and fill in the appropriate information. They describe the topic, the type of data they would collect, how they would analyze the data, and what steps would they take as a result of that analysis. When

finished, ask one member from each small group to report the results of their work to the entire group.

**Journal Writing:** What would be an appropriate topic for me to use in an action research project in my classroom or school? How would I conduct it?

## Chapter 1: Basic Brain Facts

### Summary

- Important exterior regions of the brain include the frontal, temporal, occipital, and parietal lobes, the motor cortex, and the somatosensory cortex.
- Other structures include the brainstem, limbic system, cerebrum, cerebellum, and brain cells.
- Oxygen and glucose are needed for brain cells to do their work.
- Neurons develop at an incredible rate in the young brain. Windows of opportunity develop in the early years which represent important periods when the brain responds to certain stimuli to create or consolidate neural networks.
- The emotional (limbic) system matures much faster than the executive (frontal lobes) system, one of whose functions is to control the excesses of emotions. This disparity in maturity times explains why adolescents often resort to high-risk behavior.
- The brain of today's student has developed in an environment filled with interactive as well as passive technology. It has become acclimated to novelty. Educators need to consider ways in which they can include novelty as part of the learning approaches that are used in school.

### Supplemental Information

The term “windows of opportunity” is not prevalent in the scientific literature for two reasons. First, neuroscientists are concerned that non-scientists will interpret this term to imply that learning does *not* occur much in a particular area once that window tapers off. We now know that the brain can learn throughout our entire lifetime. Second, scientists distinguish between critical windows (such as stimulating the visual cortex early in life) and noncritical windows (such as music), a distinction not usually made in the popular media.