



Study Guide

Engaging the Rewired Brain

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This study guide is arranged by chapter, enabling readers to work their way through the entire book or to focus on the specific topics addressed in a particular chapter. This guide is designed to help you reflect on and apply the ideas presented in *Engaging the Rewired Brain*, and is a useful companion piece for individuals, small groups, or an entire faculty. Learning Sciences International thanks you for your interest in this book, and we hope that this guide proves a valuable addition and support to your professional development practices.

Introduction

1. The introduction mentions numerous questions that the book will answer. Which question(s) are you most curious to learn about?
2. This book is written in seven chapters, each addressing a different component of technology's impact on the brain and ways in which technology should or should not be used in the classroom setting. Looking at the chapter descriptions in the introduction, which chapter(s) are you most interested in reading, and why?
3. What do you hope to learn or take-away from reading Engaging the Rewired Brain?

Chapter 1

Where We Are

1. What are some of the ways that technology is changing schools?
2. Why might high school teachers have more concern about the distractions of technology, than teachers of younger students?
3. List and explain the three levels of the Triple E Framework, and give a real world example of each.
4. Define student engagement, and identify some ways in which technology could encourage engagement.
5. The text describes a 2014 study linking physical movement to increased visual attention and reading comprehension in low-income students. Why do you think low-income students benefitted more than high-income students?

Chapter 2

Wiring the Young Brain

1. Although a newborn's brain is only one-third the size of an adult's brain, it has how many more neurons?
2. The persistent wiring and reshaping of brain circuits caused by environmental input is called _____.
3. A study of 180 children and their parents revealed what three significant problems with limiting and/or eliminating children's access to media?
4. What are some strategies an educator can implement in the classroom to maximize student engagement?
5. Of the strategies described on pages 34–35, which one(s) would you be most likely to utilize in your own classroom, and why?

Chapter 3

Engaging Attention

1. Attention is a complex process that involves which three different cerebral systems?
2. Differentiate between stimulus driven and goal driven attention.
3. According to a 2010 study, approximately what percentage of the day do people's minds wander?
4. The text suggests using novelty as a means of grabbing students' attention. Which of the strategies described on pages 42–44 have you used in your classroom? Which one(s) are you most likely to use going forward, and why?
5. Explain why "motivation is a key and valuable element of attention"?

Chapter 4

Engaging Memory

1. According to the text, working memory has a limited capacity. Research from the 1950's determined that children and adolescents had working memories with a capacity of 5-7 items. Recent research has lowered that capacity to about four items. Why do researchers believe this shift has occurred?
2. Describe the primacy-recency effect, and detail how a lesson could be designed around it.
3. How does emotion contribute to an individual's retention of learning?
4. The author uses the Vince Lombardi quote, "perfect practice makes perfect." What does this mean, and how is it specifically relevant to education?
5. Differentiate between massed practice and distributed practice, and provide an example of how you would utilize both.

Chapter 5

Engaging Thinking

1. Identify some strategies that might help students avoid “information overload” while working online.
2. Explain the difference between convergent thinking and divergent thinking, and give an example of both.
3. Describe the flipped classroom concept, and provide a sample lesson in which you would utilize it.
4. What are some of the benefits of integrating the Arts into other subjects?
5. How might you incorporate video games into your classroom, and what is there to be gained by doing so?

Chapter 6

Engaging Social Behavior

1. What are the brain areas involved in social interaction, and what do neuroscientists believe to be their function?

2. With the advent of technology, how has childhood development shifted from “parent-directed” to “technology directed,” and what are the repercussions of this?

3. The text describes numerous positive and negative aspects in regard to the effect technology has on the socialization of young people. Identify and describe two positive aspects and two negative aspects.

Positive	
Negative	

4. Reflection: Construct a strategy for teaching “Cyber Ethics and Netiquette,” and explain how you would handle an incidence of cyberbullying in your classroom.

Chapter 7

Where We Are Going

1. The author uses the term, “drive-by education,” what is meant by this?
2. What are the four classroom elements that teachers can differentiate?
3. The text lists numerous strategies for differentiated instruction using technology. Which of the strategies listed would you be most likely to use in your own classroom, and why?
4. What is “digital literacy” and why should it be an important component of teacher professional development?
5. The text states that, “technology will never replace teachers, but teachers who use technology will replace teachers who do not.” What does this say about the future of education, and how do your current practices compare?