

COURSE TITLE: **SCORES RISE WHEN KIDS REMEMBER: Working Memory & Learning**
WA CLOCK HRS: 60
OREGON PDUs: 60
PENNSYLVANIA ACT 48: 60

NO. OF CREDITS: **6 QUARTER CREDITS**
[semester equivalent = 4.00 credits]

INSTRUCTOR: **Brenda McKinney**
bbbrain@comcast.net

COURSE DESCRIPTION:

A good working memory is crucial to becoming a successful learner. Mounting evidence links literacy and numeracy to strong working memory. This course will provide a coherent overview of the role played by working memory in learning and its development during the school years. It will offer teachers/counselors strategies for supporting working memory in students at all ages, especially those who are underperforming. You will receive hands-on support for utilizing numerous techniques including: chunking, organization, keywords, peg words, loci, mnemonics and many more. Don't miss this opportunity to gain practical, easy-to-implement, and evidence-based methods for working with students of all ages and with all levels of ability. Appropriate for all teachers K- 12.

LEARNING OUTCOMES: Upon completion of this course, participants will have:

1. Understood the limits of working memory and how working memory functions
2. Distinguished differences between working memory and other kinds of memory
3. Distinguished differences/similarities between working memory, intelligence, and IQ and discover their links with learning
4. Taken a look at methods for assessing working memory strengths and weaknesses in classroom
5. Developed classroom based strategies to minimize working memory failure
6. Combined principles and strategies for the most effective ways to enhance working memory. Participate in memory training to strengthen personal skills in order to assist students with working memory challenges.

COURSE REQUIREMENTS:

Completion of all specified assignments is required for issuance of hours or credit. The Heritage Institute does not award partial credit.

HOURS EARNED:

Completing the basic assignments (Section A. Information Acquisition) for this course automatically earns participant's their choice of CEUs (Continuing Education Units), Washington State Clock Hours, Oregon PDUs, or Pennsylvania ACT 48 Hours. The Heritage Institute offers CEUs and is an approved provider of Washington State Clock Hours, Oregon PDUs, and Pennsylvania ACT 48 Hours.

UNIVERSITY QUARTER CREDIT INFORMATION

REQUIREMENTS FOR UNIVERSITY QUARTER CREDIT

Continuing Education Quarter credits are awarded by Antioch University Seattle (AUS). AUS requires 75% or better for credit at the 400 level and 85% or better to issue credit at the 500 level. These criteria refer both to the amount and quality of work submitted.

1. Completion of Information Acquisition assignments 30%
2. Completion of Learning Application assignments 40%
3. Completion of Integration Paper assignment 30%

CREDIT/NO CREDIT (No Letter Grades or Numeric Equivalents on Transcripts)

Antioch University Seattle (AUS) Continuing Education Quarter credit is offered on a Credit/No Credit basis; neither letter grades nor numeric equivalents are on a transcript. 400 level credit is equal to a "C" or better, 500 level credit is equal to a "B" or better. This information is on the back of the transcript.

AUS Continuing Education quarter credits may or may not be accepted into degree programs. Prior to registering determine with your district personnel, department head, or state education office the acceptability of these credits for your purpose.

ADDITIONAL COURSE INFORMATION

REQUIRED TEXT

Gathercole, Susan & Tracy Packiam Alloway. *Working Memory & Learning: A Practical Guide for Teachers.* 2012. Los Angeles, CA: Sage Books. ISBN: 978-1-4129-36143-2.

None. All reading is online.

MATERIALS FEE

Text, Working Memory & Learning: A Practical Guide for Teachers, Approximately \$15.00 used at Amazon.com

ASSIGNMENTS REQUIRED FOR HOURS OR UNIVERSITY QUARTER CREDIT

A. INFORMATION ACQUISITION

Assignment #1: Introduction.

For those participating in Group Collaboration, you must read and follow the instructions outlined in the Group Collaboration Guidelines. Click on the link for Guidelines: <https://www.hol.edu/about/group-collaboration>

- Assignment #1, each participant must complete this assignment independently.
- There should be a minimum of (4) four group meetings during which the course content is discussed.
- Teleconferences or live meetings are acceptable. A good videoconference option is Zoom (<https://zoom.us/>).
- Each participant must attend at least 75% of the group meetings (a minimum of 3 of 4 meetings).

You must complete the introduction before moving to other assignments.

In a 1-2 page introduction describe your current professional situation, some high/low points in your teaching career and why you chose to take this course.

Send to instructor: bbbrain@comcast.net. Subject line to read 'Introduction Scores Rise' #1.

Assignment #2: Exploring Working Memory.

Read pages 1-13 in the text to explore working memory, the limits of working memory, and how information is lost from working memory.

- View the following videos on why working memory is so important.

<https://www.youtube.com/embed/Rq0UumBp2TE?t=10?autoplay=1&controls=1&showinfo=0>

- Look at the definition of working memory from the video. Hopefully, this will help you expand your understanding of the difference between short-term and working memory.

- Watch the video on working memory by one of your authors:

<https://www.youtube.com/embed/S65D2oazf8M?t=10?autoplay=1&controls=1&showinfo=0>

Take a free memory assessment at:

- <http://www.workingmemory.com.au/free-memory-assessment-quiz/>
- <https://www.memorylosstest.com/free-working-memory-tests-online>

What was new information for you in this section? What are the implications for your classroom/teaching situation? In a 500 + word response discuss the definition of working memory, its limitations, and how it works.

Send to instructor: bbbrain@comcast.net. Subject line to read 'Scores Rise' #2.

Assignment #3: Short Term, Working & Long Term Memory.

Read 13-17 in your text to define short-term, working, and long-term memory. How are memories formed?

- To learn additional information about The Many Facets of Memory go to:
<https://www.youtube.com/watch?v=nTT2S05ASdU>
- To learn more about the different types of long term memory view the following memory pages.
First look at implicit memory
<https://www.youtube.com/watch?v=0tZeFlt5h3Q&t=4s>
- ?Next look at explicit memory
<https://www.youtube.com/watch?v=zkvFEiUa8KM&t=77s>

What was new information for you in this section? What are the “implications” for your classroom/teaching situation?

In a 500+ word response discuss long-term memory and its types. Include a look at the relationship between short-term, working, and long-term memory.

Send to instructor: bbbrain@comcast.net. Subject line to read ‘Scores Rise’ #3.

Assignment #4: Working Memory - Reading & Math.

Read pages 19-31 to discover how working memory capacity is closely associated with reading and math achievement even from early ages.

- Why are the differences in WM capacities so profound? What is the relationship between WM and attention?
- What is the link between working memory and IQ? What are some possible assessments that will help you evaluate working memory deficits?
- What was the most profound learning in this section for you?
- What implications do you see for your classroom/teaching situation?

In a 250+ word response discuss developmental changes in working memory (WM) throughout childhood, especially as it relates to reading and math ability.

Send to instructor: bbbrain@comcast.net. Subject line to read ‘Scores Rise’ #4.

Assignment #5: Working Memory.

Read pages 33-47 to discover how working memory capacity is closely associated with reading and math achievement even from early ages.

- How do we identify children at risk of poor academic progress at an earlier age?
- How have we missed this connection for so many years.
- What is the connection between those with learning disabilities and working memory function?

Check out this video on WM, ADHD, and the role of the instructor:

<https://www.youtube.com/embed/Nls3wxRZEoE?t=21?autopause=1&controls=1&showinfo=0>

What was the most profound learning in this section for you?

What are the “implications” you see for your classroom/teaching situation?

In a 250+ word response define the link between working memory, and achievement while detailing the connection between working memory capacity and the ability to learn.

Send to instructor: bbbrain@comcast.net. Subject line to read ‘Scores Rise’ #5.

Assignment #6: Poor Working Memory.

Read pages 49-65 in your text to understand the general behavior, poor academic performance, and other difficulties in the classroom experienced by those with poor working memory. Analyze how to recognize problems with working memory.

Watch the following videos:

<https://www.youtube.com/embed/MENooLDownY?t=3?autoplay=1&controls=1&showinfo=0>

<https://www.youtube.com/embed/GLVo3woBkFQ?t=41?autoplay=1&controls=1&showinfo=0>

- What are the most common difficulties of children with poor working memory?
- What are the “must-have” ideas for lesson design and application?
- What are the implications for your classroom/teaching situation?

In a 1-2 page paper outline the characteristics of children with poor working memory.

<https://www.youtube.com/embed/WUxo5s8HHcE?t=1018?autoplay=1&controls=1&showinfo=0>

Send to instructor: bbbrain@comcast.net. Subject line to read ‘Scores Rise’ #6.

Assignment #7: Intervention.

Read pages 67-90 to understand and then create a list based on the principles of WM intervention.

- Watch the following videos for additional information about how to increase WM.
- Discuss the validity of computer programs to help improve working memory.

<https://www.youtube.com/embed/RxrbwMsKud4?t=4?autoplay=1&controls=1&showinfo=0>

<https://www.youtube.com/embed/wxVaelHUUjA?t=78?autoplay=1&controls=1&showinfo=0>

What are the principles of the classroom-based working memory approach?

1. What are the Top 10 ideas for your classroom?
2. What are the “must have” ideas for lesson design and application?
3. What are the “implications” for your classroom/teaching situation?

In a 500 + word response explore ways to minimize working memory failures and enhance learning opportunities at all levels. Combine knowledge of cognitive theory and research.

Send to instructor: bbbrain@comcast.net. Subject line to read ‘Scores Rise’ #7.

Assignment #8: Some Questions.

Read pages 91-109 in your text.

Watch this video:

Working Memory and Classroom Learning by Dr. Joni Holmes

<https://youtu.be/WUxo5s8HHcE?t=6>

<https://www.youtube.com/embed/WUxo5s8HHcE>

In a 500+ word response, consider the latest research from the video on working memory and difficulties in the classroom. What are your takeaways, thoughts on structural changes, and procedures you could incorporate in your classroom?

Ideas to consider in your response:

- Take some time to summarize your new thinking based on the research.
- What classroom changes did you observe that might work for you?
- Can working memory be specifically changed by training?
- What did you learn about working memory and its decline in aging?
- What are the “must have” ideas for lesson design and application?
- What are the “implications” for your classroom/teaching situation

Send to instructor: bbbrain@comcast.net. Subject line to read ‘Scores Rise’ #8.

ADDITIONAL ASSIGNMENTS REQUIRED FOR UNIVERSITY QUARTER CREDIT

B. LEARNING APPLICATION

In this section you will apply your learning to your professional situation. This course assumes that most participants are classroom teachers who have access to students. If you are not teaching in a classroom, please contact the instructor for course modifications. If you are a classroom teacher and start or need to complete this course during the summer, please try to apply your ideas when possible with youth from your neighborhood, at a local public library or parks department facility, (they will often be glad to sponsor community-based learning), or with students in another teacher's summer classroom in session.

Assignment #9: Apps for Working Memory

Research and investigate at least 5-7 working memory apps. Choose three to highlight. If they are free, try them out or allow a student to try them in your classroom. If they are one that must be purchased do some research on the statistics surrounding the worth of the app. The following is a great resource for you to get started through Neuro Assessment & Development Center - Apps for Working Memory Training.

https://www.neurodevelop.com/APPS_for_Working_Memory_Training

In a 500+ word response detail your investigation, tests that were taken, and programs that are considered most effective. In the best world, you would be able to purchase one for your students with WM issues.

Send to instructor: bbbrain@comcast.net. Subject line to read 'Scores Rise' #9.

Assignment #10: RIP Toolbox.

- Check out memory methods at RIP Toolbox for Memory:
<https://www.readingrockets.org/article/making-it-stick-memorable-strategies-enhance-learning#:~:text=This%20toolbox%20contains%20the%20three,it%20is%20organized%20and%20rehearsed.>
- Choose at least ten (10) strategies that will enhance working memory in your classroom. Try at least six of them with your students. In the summer, check with your instructor or use the strategies on a neighbor/relative.

In a 250+ response detail how you will add the strategies to your teaching repertoire and, if possible, try each of them with your class. Include the list of activities and your response and effectiveness with the ones you tried.

Send to instructor: bbbrain@comcast.net. Subject line to read 'Scores Rise' #10.

Assignment #11: Develop a Case History.

For those participating in **Group Collaboration**, this assignment is **Required** to be completed individually by all participants.

Develop a case history for two children who have struggled to be successful in your classroom. Based on your learning from this course, create and implement a plan of action to address the students' working memory issues in a new way and to help each student change his/her view of learning and achievement.

Describe your case history, your plan of action and the student outcomes in a 500+ word response providing samples of student work if available.

Send to instructor: bbbrain@comcast.net. Subject line to read 'Scores Rise' #11.

Assignment #12: (500 Level ONLY)

In addition to the 400-level assignments, complete **ONE(1)** of the following assignment options:

Option A)

Create a 20-minute PowerPoint presentation for your staff based on this course and focused on perspectives or strategies you feel would be beneficial for your school. Save this as a PDF.

Send to instructor: bbbrain@comcast.net. Subject line to read: 'Scores Rise' #12-A.

OR

Option B)

Mentor another individual in the concepts of this class. Have them share two or three key concepts that they would like to implement within their work or social setting. In a 3-4 page paper share the specifics of the plan to increase working memory and how it will be

evaluated for success.

Send to instructor: bbbrain@comcast.net. Subject line to read 'Scores Rise' #12-B.

OR

Option C)

Research videos on WM to use with your students. Choose at least 5 and detail how you would use in the classroom or with small groups.

A place to start is with this link. You could also use movie clips. Type in working memory training for kids and that will provide a number of excellent videos to get you started. Be creative and age-appropriate.

In a 250+ word response detail your search and the amazing finds that will assist you in teaching ALL kids about WM.

Send to instructor: bbbrain@comcast.net. Subject line to read 'Scores Rise' #12-C.

C. INTEGRATION PAPER

Assignment #13: (Required for 400 and 500 Level)

SELF REFLECTION & INTEGRATION PAPER

(Please do not write this paper until you've completed all of your other assignments.)

1. What did you learn vs. what you expected to learn from this course?
2. What aspects of the course were most helpful and why?
3. What further knowledge and skills in this general area do you feel you need?
4. How, when, and where will you use what you have learned?
5. How and with what other school or community members might you share what you learned?

Send to your instructor at their email address. Subject line to read "(put course name here) Integration Paper"

INSTRUCTOR COMMENTS ON YOUR WORK:

Instructors will comment on each assignment. If you do not hear from the instructor within a few days of posting your assignment, please get in touch with them immediately.

QUALIFICATIONS FOR TEACHING THIS COURSE:

Brenda McKinney, CEO of Vancouver, WA based BrainVolution, is a developer and dynamic facilitator of workshops that teach practical thinking and learning tools for raising student achievement with the brain in mind. She has trained educators throughout the Pacific Northwest and is a popular presenter because of her ability to motivate, make things fun, and teach practical techniques for the classroom that can be used immediately. Brenda continues to read hundreds of books and articles on the subject of neuroscience and searches for the answer to success for every student. Her work with at-risk students and those with reading problems have made her a popular speaker at the state, regional and national level.

Brenda is able to synthesize the new research and continues to address the role of how to use the latest findings to create high achievement classroom. She brings 30+ years of experience at the elementary, middle school, high school and university level as a mentor teacher, consultant, motivational speaker, university instructor, and reading specialist. Brenda has her Master's in Education from Washington State University and is nationally certified in Brain Based Learning through the renowned Jensen Corporation, led by Eric Jensen, a noted international spokesperson for neuroscience and education.

Brenda will inspire and motivate you with her energy, enthusiasm and knowledge. Her wisdom, techniques, and brain based approach to education will inspire you and challenge you to meet the demands of this ever changing world.

BIBLIOGRAPHY

SCORES RISE WHEN KIDS REMEMBER: Working Memory & Learning

Alloway, Tracy & Ross Alloway. *The Working Memory Advantage: Train Your Brain to Function Stronger, Smarter, Faster.* Simon and Schuster. 2013. ISBN: 978-1-4516-5012-9. *The Working Memory Advantage* shows why working memory is linked with [ADHD](#), autism, dyslexia, Alzheimer's, and ultimately, success in the classroom.

Cook, Gareth. "Brain Games are Bogus." *The New Yorker*. April 5, 2013. An alternate view of whether brain games are beneficial for improving working memory.

The article looks at working memory as a critical link with achievement but explores the question of whether working memory and intelligence work together. Do Brain Games actually increase intelligence? This article is in opposition to many sources who believe that they can. Interesting and helpful to take a look at both sides of the issue in understanding working memory and the role it plays in

success in the classroom.

Dehn, Milton. *Helping Students Remember: Exercises and Strategies to Strengthen Memory.* John Wiley & Sons, Inc. 2011. ISBN: 978-0-470-91997-2.

This book is so valuable I wanted to use it as a textbook. I recommend this book for your classroom. It is broken down into Lower Level and Upper Level activities working memory activities. There are so many quick activities that can be used to assist and assess your students in understanding their working memory. The strategies help students and teachers understand how to strengthen memory by using the right strategies. Highly Recommended!!

Gathercole, Susan & Tracy Packiam Alloway. *Understanding Working Memory: A Classroom Guide.* <http://www.mrc-cbu.cam.ac.uk/wp-content/uploads/2013/01/WM-classroom-guide.pdf>. 2007. This download is a quick reference on working memory. It also becomes a handy guide for you to pass working memory research to other teachers. This learning needs to be shared as we work with kids who are struggling in the classroom and who look unmotivated. This is a helpful source.

Gathercole, Susan & Tracy Packiam Alloway. *Working Memory and Learning. A Practical Guide for Teachers.* Sage Press. 2008. ISBN: 978-1-4129-3613-2.

A good working memory is crucial to becoming a successful learner; the problem I discovered is that it was very difficult to find material in an easy to use format to share about working memory and how to support learners in the classroom. This text provides that and more. This book offers a coherent overview of the role played by working memory in learning during the school years and uses theory to inform good practice.

Klingberg, Torkel. *The Overflowing Brain.* Oxford University Press. 2009. ISBN: 978-0-19-537299-5.

Dr Klingberg asserts that working memory capacity, long thought to be static and hardwired in the brain, can be improved by training, and that increasing the demands on working memory may actually have a constructive effect: as demands on the human brain increase, so does its capacity. The book ends with a discussion of the future of brain development and how we can best handle information overload in our everyday lives.

Mason, Douglas & Michael Lee Kohn. *The Memory Workbook: Breakthrough Techniques to Exercise Your Brain and Improve Your Memory.* Publishers Group West. 2001. 1-57224-258-2. This book offers an array of innovative techniques, exercises, games, and puzzles designed to help you see and understand how your memory works. At the same time you will be given a chance to stretch your own memory muscles.

Wickelgren, Ingrid. "Calisthenics for a Child's Mind." *Scientific American Mind*, May/June 2013, 39-45. Research about the critical importance of working memory and its effect on achievement.

Zimmer, Carl. "The Man who Wasn't There." *The Wall Street Journal*. June 14, 2013. This article on HM provides a background and understanding of memory that has changed research and is invaluable. Check it out. You could also discover HM by going to <http://www.youtube.com/watch?v=LBsW5qz5sDU>