Using Brain Research to Improve Learning

Brandman University: EDDU 9608 – 3 Semester Hours

Thank you for registering for this course. Included are the following important documents:

1. Course Syllabus
2. Course Materials
3. Assignment Plan – Assignments to turn in & Grading Rubric
4. Course Hourly Breakdown
5. Participant Evaluation Form

Assignment Deadline: This course is a rolling course throughout the year, which means it does not have a specific deadline. However, you must submit all completed assignments by 6 months after the registration date with Credits for Teachers. Please allow 4 weeks from the date assignments are submitted for the grade to be added to your transcript.

Registering with Brandman University: Please register with the university prior to starting your coursework. *Students must register for the course through Brandman prior to the end of the semester in which they are enrolled with Credits for Teachers.* To register, visit their website here. If you are registering with Brandman for the first time, create an account. If you are a returning student, enter your login information.

Upon Completion of the Course:

1. Please submit all completed assignments in PDF format in one email to grades@creditsforteachers.com.
2. Complete a Course Evaluation (2 minutes) by clicking the link below - Course Evaluation Form

Brain Research - Syllabus

EDDU 9608
3 credits

Course Description: This course offers many different brain research-based strategies to help educators improve student learning. The course also provides an understanding of the brain and how it works, especially while the brain is learning. The basis of the course is developing an understanding of how the workings of the brain can help educators better their teaching. The strategies offered help improve student memory as well as memory retrieval which therefore helps them learn.

Learning Objectives:

- Students will learn and understand how the brain works while it is learning.
- Students will learn different strategies of how to make better neural connections in the brain, how to transfer information from short-term to long-term memory, and how to retrieve those memories.
- Students will be able to apply brain research to develop better teaching practices in order to improve student learning.
- Students will develop skills to reflect on & improve their own teaching practices.

Course Materials:

- Readings:
    - List of chapters below all from the book *Research-Based Strategies to Ignite Student Learning: Insights from a Neurologist and Classroom Teacher* by Judy Willis, M.D.:
        - (Required) "1: Memory, Learning and Test Taking Success"
        - (Additional) "2: Strategies to Captivate Students' Attention"
- Video: Brain Based Learning
- Content Implementation: (You will choose one of the following options.)
    - OPTION 1: Implementation Plan & Implementation Plan Template
    - OPTION 2: Hour Log Template & Hour Log Example

  *NOTE: The example is meant to act as a reference for what different entries could look like in the hour log assignment. Although this example relates to the *Growth Mindset* course, the outline and example entries can still be used as a model for what to include in the hour log assignment.
- Course Evaluation Form

Assignments:

1. Read the packet entitled "1: Memory, Learning, and Test Taking Success" from the book *Research-Based Strategies to Ignite Student Learning: Insights from a Neurologist and Classroom Teacher* by Judy Willis, M.D.

2. Watch the following video: Brain Based Learning

3. In at least 1 page, explain how understanding more about the brain and how it works to learn new information can help you be a better teacher? Refer to the text and video and discuss the parts that were most helpful for you.

4. The beginning of the reading discusses the idea of pruning and "use it or lose it." In at least 2 pages, explain different examples of how you have seen this in action either in your classroom with your students or in your own experiences with your own learning. Then, discuss ways you have made or will make sure students make thicker connections between neurons so the neurons are not pruned.

5. Content Implementation: ***You only have to complete one of the following options.***
   OPTION 1: This section typically applies to in class (or within the school day) implementation of strategies. For teachers that are in their summer break or do not have contact with students due to COVID-19, please refer to the Implementation plan for how to adjust this section accordingly. The Implementation Plan takes the place of the Hour Log, so you only have to do one or the other. Links to the Implementation Plan assignment and template can be found above in "Course Materials."

   Make sure to include the following in your 4 week plan:
   - Use multiple ways to learn the material through multiple senses
   - Incorporate multiple subjects = make it cross curricular
   - Cultivate an enriched environment
   - Use application activities to move information from short-term to long-term memory
   - Personalize the information for the students
   - Incorporate some element of surprise
   - Minimize levels of stress for the students while still incorporating some level of challenge
   - Give brain breaks or "syn-naps"
   - Include an analogy activity after a brain break
   - Incorporate a teachable moment

   OPTION 2: Complete an hour log that logs the hours when you implement strategies from the course. Choose some upcoming lessons to begin implementing the brain research strategies in your classroom with your

students. Use the following strategies to guide your planning and teaching. Use examples from the text to help you as well.

- Use multiple ways to learn the material through multiple senses
- Incorporate multiple subjects = make it cross curricular
- Cultivate an enriched environment
- Use application activities to move information from short-term to long-term memory
- Personalize the information for the students
- Incorporate some element of surprise
- Minimize levels of stress for the students while still incorporating some level of challenge
- Give brain breaks or "syn-naps"
- Include an analogy activity after a brain break
- Incorporate a teachable moment

Spend a minimum of 60 hours (about 2 weeks) implementing the strategies from the course and log the 60 hours. Possible options to use for logging hours include but are not limited to:

- Planning lessons
- Teaching lessons
- Reflections on practice
- Research of course topics (This could include the additional reading(s) listed above in the "Course Materials.")
- Planning with colleagues

For each day, briefly explain what you accomplished, the lesson you taught, the strategies from the course utilized, and their effectiveness on students' learning. Make sure to include dates, the total hours spent each day or for each entry, and the total hours spent overall. Links to an Hour Log template and example can be found above in "Course Materials."

*NOTE: You will expand and elaborate on the strategies used and how it all went in your Final Reflection assignment. The hour log is meant to serve as a brief description of recorded evidence that 60 hours of course content implementation were completed.

Additionally, use this log as an opportunity to reflect on the successes of implementing various strategies and what modifications can be made to improve the success of these strategies in subsequent lessons.

6. Final Reflection: ***You only have to complete one of the following options.***
   OPTION 1: If you completed the course during the summer or during COVID-19 closures and completed the Implementation Plan, follow the guidelines below.

a. Write a minimum two-page paper explaining how you plan to implement the strategies from the course. Make sure to answer the following questions in your reflection.
    i. What will the strategies look like and/or sound like in your classroom? What will you be doing as the teacher? What will students be doing?
    ii. What impact do you hope to see from using these strategies on your teaching and on student learning?
    iii. How is this way of teaching the unit different from how you taught the unit in the past?
    iv. What do you plan to do to support the effectiveness of the methods and strategies?
    v. What modifications do you plan to make on any of the strategies and why? (If you are not planning on making any modifications, feel free to skip this question.)
    vi. What challenges do you foresee arising from using any of these strategies?

OPTION 2: If you completed the course during the school year and completed the Hour Log assignment, follow the guidelines below.

a. After consistently planning and implementing the brain research strategies listed above in #5 in your lessons for 2 weeks (60 hours), reflect on the effectiveness of using these strategies on your teaching and student learning.
b. Write a minimum two-page paper explaining the impact of using the brain research strategies on your teaching and on student learning. Make sure to answer the following questions in your reflection.
    i. What did the strategies look like and/or sound like in your classroom? What were you doing as the teacher? What were students doing?
    ii. Were the strategies successful and did you notice a difference compared to when you taught that topic in the past?
    iii. What did you do to support the effectiveness of the methods and strategies used? Did you modify any of the strategies to help meet your needs or the needs of your students? If so, describe the modifications and explain the reasoning behind them.
    iv. What was challenging or didn't work as well as you would have hoped?
    v. How would you modify any part of what you implemented to make it more effective in the future?
    vi. What did you take away from this research to use in the future?

Brain Research - Assignment Plan, Evaluation & Grading

Reading & Video Reflection (Written Response Rubric)	X/15 pts
Pruning Reflection (Written Response Rubric)	X/15 pts
*Hour Log Assignment OR Implementation Plan	----------
Final Reflection on Brain Research (Final Reflection Rubric)	X/40 pts
Final Grade	X/70 pts

(*The assignment is required but is not graded)

Final Grade Scale
63-70 - A
56-62 – B
49-55 – C
42-48 – D
41 & Below – F

Written Response Rubric (Used for Reading & Video Reflection & Pruning Reflection):

Grade	Description
A (14-15)	Student answers all questions thoroughly with detail. The responses are well thought out and in depth and show understanding of the brain as it relates to learning. The examples given are detailed to the point that it is very clear what the outcome will look like in the classroom.
B (12-13)	Student answers all questions. Examples of new strategies are explained. More detail could have been given in one or more of the responses.
C (11)	Some questions are complete while others are not. Student may have left out examples or just failed to answer all parts of the question. Strategies from the course are mentioned but full understanding is missing.
D (9-10)	Student has attempted to answer all questions but answers are incomplete. Not all parts of the questions are addressed and/or the strategies mentioned do not reflect the brain-based research from the course.
F (0-8)	Answers are incomplete with a one or two sentence answer. There is no elaboration. Strategies are missing or do not reflect the brain-based research from the course.

Final Reflection Rubric:

Grade	Description
A (36-40)	Student has developed multiple lessons or a unit plan that incorporates all of the strategies listed in the assignment (#5). There is a detailed explanation of how each strategy was implemented within the lesson(s), and the explanation clearly shows an understanding of each strategy. If anything was modified, an explanation of how and why strategies were modified is included. Lastly, student has answered all of the reflection questions.
B (32-35)	Student has developed multiple lessons or a unit plan that incorporates the majority of the strategies listed in the assignment (#5), but 2 or 3 are missing. There is an explanation of how the strategies were implemented within the lesson(s), and the explanation shows an understanding of the strategies mentioned. If anything was modified, an explanation of how and why strategies were modified is included. Lastly, student has answered all of the reflection questions.
C (28-31)	Student has developed multiple lessons or a unit plan that incorporates half of the strategies listed in the assignment (#5), but half are missing. There is an explanation of how the strategies were implemented within the lesson(s), and the explanation shows an understanding of the strategies mentioned. If anything was modified, an explanation of how and why strategies were modified is included. Lastly, student has answered the majority of the reflection questions, but some questions are not addressed. OR Student has completed the requirements listed to receive a "B". However, the explanation of the strategies is incomplete, it is unclear how the strategies were implemented, and there is little understanding of the strategies mentioned. Lastly, student has answered the majority of the reflection questions, but some questions are not addressed.
D (24-27)	Student has developed multiple lessons or a unit plan that incorporates half of the strategies listed in the assignment (#5), but half are missing. There is an explanation of how the strategies were implemented within the lesson(s), but it is incomplete and not all of the strategies from the lessons are explained. The explanation does not show an understanding of the strategies mentioned. Lastly, student has answered the majority of the reflection questions, but some questions are not addressed.
F (0-23)	Student has developed multiple lessons or only 1 lesson that incorporates less than half of the strategies listed in the assignment (#5). Very little is explained about how the strategies were implemented within the lesson(s), and the explanation does not show an understanding of the strategies mentioned. Student has answered some of the reflection questions but responses are very incomplete, or none of the questions have been answered.

Brain Research - Suggested Hourly Breakdown

Course Readings, Videos & Additional Materials	5
Planning strategies into lessons	10
Practicing (or planning) strategies/techniques in the classroom	*20
Reflecting on lessons and effectiveness of strategies	5
Brainstorming, researching and writing all assignments	5
Total Hours	45

*Note: When utilizing the Hour Log option, the 20 course hours listed equates to 60 hours of course content implementation.

Upon Completion of the Course:

1. Please submit all assignments in PDF format to grades@creditsforteachers.com.
2. Complete a Course Evaluation (2 minutes) by using the link below - Course Evaluation Form

Bibliography

Hutton, Graham, director. *Brain Based Learning*. *YouTube*, YouTube, 24 Feb. 2018, www.youtube.com/watch?v=-T9f50_uvlg.

Willis, Judy. *Research-Based Strategies to Ignite Student Learning: Insights from a Neurologist and Classroom Teacher*. Association for Supervision and Curriculum Development, 2006.

Credits for Teachers Policies

Graduate-level professional development credits are not part of a degree program. These courses can be used for professional development, salary advancement, and recertification. Students should seek approval of appropriate district or college officials before enrolling in these courses to satisfy any degree, state credential, or local school district requirements. This credit may be applied toward a degree program at the discretion of the accepting institution. Courses are rolling throughout the year, which means it does not have a specific deadline to submit completed assignments. You must submit coursework by 6 months after the registration date with Credits for Teachers. Students have up to 30 days after the purchase of a course to request a refund.

Thank You!


CREDITS
FOR TEACHERS