Theories of Learning and Cognitive Development

Credit hours: 3.0 - (graduate)
Instructor: Dr. Kimberly Williams
Office Location: available online
Office and/or Online Availability
PSU E-mail: kmwilliams3@plymouth.edu
Term and Year: Fall 2013
September 1-November 30, 2013

PLEASE READ SYLLABUS CAREFULLY! IT IS YOUR GUIDE TO THE COURSE.
Course Delivery (Times, Days and Locations, and/or Online in Moodle, including information for access to and expectations in Moodle):

Online in Moodle 2—this course is asynchronous—students are expected to post assignments weekly and responses to peers a minimum of 2 times per week. This course uses the Moodle discussion forum feature, but we do not have regular scheduled meeting times online. Download the syllabus from the syllabus link and go to the discussion forum for regular posting of papers/assignments. Much of the course content is located on the main page as you log into the Moodle class page. Please be sure to check Moodle regularly and examine the links within each module AND INCLUDE COMMENTS ABOUT THE CLIPS IN YOUR PAPERS. You will need some kind of video viewer to be able to watch videos within the modules.

Instructions for Online/Moodle part of the course: Theories of Learning

1. Please use the syllabus as your guide to papers and assignments. It spells out what is due when.
2. Below are some general rules:
   a. As a general rule, please try to post papers by midnight EST on their due date
   b. Please try to post your review/reflection/discussion/responses of your classmates’ papers or discussion postings for a given discussion week no later than Wednesday the following week by midnight EST.
c. Comment/reply publicly to at least 2 of your classmates’ papers—preferably the person who posted just before you and the person who posted just after you (so everyone has responses to their papers/posts) with substantive comments about content within their papers. Your job is not necessarily to be unnecessarily critical, but to provide thoughtful reactions and feedback to their content.

d. I am pretty flexible about these times, but for those of you needing structure, these serve as a guide as long as you do not get more than a couple of days behind your classmates. It is VERY difficult to get caught up as this class moves very quickly!

3. On Moodle, you will be checking the discussion forums regularly:
   a. You will check the board daily if possible for postings and respond to discussions you feel compelled to join
   b. My comments are designed for EVERYONE to read. Much like in a class discussion, my comments are meant as learning points. Please do read all postings.
   c. The expectation is that every week/module, you will post a minimum of 2 substantive public responses to your classmates’ papers/thoughts/blogs/discussion forum postings.
   d. I will be grading your papers on the assignment board—please post graded assignments on both the discussion forums as well as the “assignments” space so we can all learn from each others’ papers and I can privately grade each of your papers.
   e. If you have any “private questions” please email me at kmwilliams3@plymouth.edu, but if you have a general question or comment post it in the section called “announcements”

4. For videos and other supplemental material:
   a. The expectation is that you will be reviewing the content in the learning modules for each week/module. Failure to incorporate the content of the modules into your book review papers every other week will result in your paper grade being reduced.
   b. The content in the learning modules will require that you are able to stream video and audio online. If you have an issue with technology, you may want to see if you can gain access through your school and watch clips together. Generally folks do not have a problem with the audio and video clips.

5. You may receive a free copy of the Thinking Maps software by going onto my Dropbox. I will send an invitation to your Plymouth email account if you are interested please let me know. You will not be required to use the Thinking Maps software but you will be encouraged to try.

6. Have fun—this course is really about you and your own learning in ways that are meaningful and connect to your classroom practice. I hope that we will have a lot of lively on-line discussions that really help inform your own learning and reflection on your practice in the classroom. I’m flexible about dates understanding that life happens, just please let me know if you need a little extra time for an assignment.
Catalog Description

Course Description: An overview of current theories concerning the brain, development and learning. Analysis of developmental concepts from birth through adolescence and adulthood. Discussion of language acquisition, thinking and learning styles, multiple intelligences and cognition. Topics include teaching, learning, and assessment issues related to cultural diversity, technology, and learning differences.

Course Overview

What is our overarching question in this course?

What cognitive strategies can we use that are most likely to improve student learning in the classroom (and beyond)?

This question is basically causal—meaning, we want to figure out which strategies are most likely to CAUSE improved learning in the classroom (and beyond). However, there is a CONFLICT because there are so many contradictory voices, research outcomes, sources of information that it is difficult to know what strategies are most effective. So, we have some COMPLICATIONS in our story of this course—the complications come from the different sources of evidence and how to know what to believe or implement in our classrooms. And there are a lot of CHARACTERS in this story—from all of us in this class and our own experiences learning to the authors of the texts and researchers we will read (or have read). Whom can we trust? How do we know?

Course Learning Outcomes:

At the conclusion of this course, students will be able to:

1. Design evidence-based strategies to enhance purposeful thinking/cognition used in their own classrooms (Paper 1 and 2)
2. Apply theories to their workplace settings and professional roles, through the development of the brain-compatible lesson plan. (Paper 2)
3. Critique a variety of research sources/evidence on how the brain learns to inform an original literature review on a learning-related topic. (Paper 3)

Textbook List/Bibliography/Recommended Reading/Resources

http://www.brainrules.net/
http://www.danielwillingham.com/

There are additional readings and links on Moodle site and videos with additional information on each of the authors’ websites.

**Additional possible readings for projects or outside interest:**


**Professional Standards, Course Goals/Objectives, and Assessment**

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Standard(s) Assessed</th>
<th>Assessment Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment: Book reviews, lesson plan using cognitive theories</td>
<td>ISLLC Standard 2: Knowledge of the Philosophy of Learning</td>
<td>Rubrics are included below</td>
</tr>
</tbody>
</table>

**Content of Course Which Addresses Technological Standards/Competence**

Students must upload files into Moodle, participate in online discussions using the Moodle platform, and access video and audio clips.
Evaluation Plan/Grading Scale

Course Requirements and Assessment:

1. Apply key learning from cognitive neuroscience and educational research to personal lives/learning. (Paper 1)
2. Consider strategies to enhance purposeful thinking/cognition used in their own classrooms (Paper 1 and 2)
3. Apply cognitive research to their workplace settings and professional roles, through the development of the brain-compatible lesson plan. (Paper 2)
4. Critique a variety of research sources to inform an original literature review/paper/alternative project on a learning-related topic. (Paper 3)

Introduction Assignment Posting: Welcome and “what matters to me most and how I learn best”

Make a post that discusses the following:

• how you think you learn best,
• what motivates you to learn and do your best,
• your most memorable learning experience, and
• your thoughts on how we can work together to make this learning experience as fruitful as possible for everyone

PAPER 1: The “Brain Rules” and Me:

Carefully examine each of the brain rules and the detailed description/examination that Medina makes of each. For each of the 12 consider the following and please apply SPECIFIC principles Medina discusses:

1. How much do I consider this rule in my own personal daily life?
2. How much do I/can I consider this rule in my professional daily life?
3. To be able to fully infuse/integrate these rules into my personal/professional life, what would I need to change/do?
4. What are the implications of these rules for education
Rubric for Paper 1

<table>
<thead>
<tr>
<th>0-1 point</th>
<th>2-3 points</th>
<th>4-5 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies very few or no important supportive details from the chapters</td>
<td>Applies some important supportive details from the chapters</td>
<td>Applies important supportive details from the chapters</td>
</tr>
<tr>
<td>Provides very few or no examples of each rule (or leaves out several rules) applied to personal life</td>
<td>Provides some examples of each rule applied to personal life</td>
<td>Provides examples of each rule applied to personal life</td>
</tr>
<tr>
<td>Provides very few or no examples of each rule (or leaves out several rules) applied to professional life</td>
<td>Provides some examples of each rule applied to professional life</td>
<td>Provides examples of each rule applied to professional life</td>
</tr>
<tr>
<td>Discusses very few or no changes needed to fully integrate each of the rules (or leaves out several rules)</td>
<td>Discusses some changes needed to fully integrate each of the rules</td>
<td>Discusses changes needed to fully integrate each of the rules</td>
</tr>
<tr>
<td>Considers very few or no implications of each of the rules (or leaves out several rules) are for education</td>
<td>Considers what some of the implications of each of the rules are for education</td>
<td>Considers what the implications of each of the rules are for education</td>
</tr>
</tbody>
</table>

PAPER 2: How can I help students like school?

Given the information in these chapters, what specifically can be done to help students like school and engage and learn more in school? BE SPECIFIC.

1. Create a list of specific strategies that might go on a poster (you may choose to do a poster to support your paper) and precisely how you might use them.

   AND

2. Create a detailed lesson plan with a “hook” and learning outcomes along with specific questions and a specific detailed plan including assessment plan and closure. Here is a model you may use:
   • Learning Outcomes (what will learners be able to do as a result of this lesson? What questions are you asking? What problems will they be solving?)
   • Hook (how are you going to “hook” learners within the first few moments—why should they care about this?)
   • What is the purpose of this lesson and how will you let students know why it is important?
   • What will you do?
   • What will you expect students to do?
   • How will you determine if each student understands the material covered?
   • How will they get to practice/engage with the material?
• Closure—how will you bring the whole lesson together in a closure activity/opportunity

OR you may use the storytelling method that Willingham proposes to figure out the question that you’ll have students grapple with and the “Four Cs”:
  Cause
  Conflict
  Complications
  Characters

(You will get one bonus point for really trying to use Willingham’s model well)

Please also INCLUDE A NARRATIVE DESCRIPTION/EXPLANATION OF YOUR POSTER AND LESSON PLAN AND WHAT PARTICULAR ASPECTS OF THE READING INFLUENCED IT—WHAT EVIDENCE? ETC.

<table>
<thead>
<tr>
<th>0-1 point</th>
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<th>4-5 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies very few or no important supportive details from the chapters</td>
<td>Applies some important supportive details from the chapters</td>
<td>Applies important supportive details from the chapters in narrative</td>
</tr>
<tr>
<td>Provides very few or no examples</td>
<td>Provides some examples from some chapters</td>
<td>Provides examples of each chapter in narrative that provides details from the reading (particularly Willingham)</td>
</tr>
<tr>
<td>Provides very few or no examples of strategies</td>
<td>Provides some examples of strategies with some grounding in reading</td>
<td>Gives good examples of strategies that can be used that are grounded in the readings with specific examples in poster</td>
</tr>
<tr>
<td>Lesson plan is lacking components and details</td>
<td>Creates a good lesson plan lacking components or details</td>
<td>Creates a good lesson plan that includes all the components and details with narrative explanation of links to course readings</td>
</tr>
<tr>
<td>Lesson plan considers few or no key ideas from readings</td>
<td>Lesson plan considers some take away ideas from readings</td>
<td>Lesson plan considers key take away ideas from all readings to-date with narrative explanation and detailed evidence from readings</td>
</tr>
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_/25 points_
ASSIGNMENT 3: Learner’s Choice

For the final assignment, your job is to learn about a topic that is relevant for this course on learning and cognition that has been particularly interesting to you and you’d like to learn more in-depth. The presentation of your learning journey is up to you. For example, you could create a video blog or a video of a presentation or a lesson that you conduct that is videotaped or that you write up, or a newsletter, or a musical or dance routine. Be creative here, but show the depth of your improved understanding of this topic and consider our starting question. You may of course, do a more traditional research paper if you choose. If so, there is a rubric for that. If you choose the creative option (ideally based on how you think you learn best), then tell me what grade you think you deserve and why.

<table>
<thead>
<tr>
<th>RUBRIC FOR ASSIGNMENT 3 (Should you choose the paper option)</th>
<th>1-3 points</th>
<th>4 points</th>
<th>5 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thesis and conclusions</td>
<td>Thesis and/or conclusions are limited</td>
<td>Thesis conclusions are somewhat grounded in research and are relevant or compelling</td>
<td>Thesis and conclusions are grounded in the research literature and course content—relevant and compelling</td>
</tr>
<tr>
<td>Research literature used</td>
<td>Studies included are dated or unclear that they are from peer-reviewed sources</td>
<td>Some good contemporary studies included—3-4 from peer reviewed sources</td>
<td>Good contemporary studies included—used a minimum of 5 from peer reviewed sources</td>
</tr>
<tr>
<td>Analysis of research literature</td>
<td>Lacking good analysis and few connections</td>
<td>Some good analysis of evidence with limited connections</td>
<td>Carefully analyzed evidence and critique of evidence—connections made between and among studies</td>
</tr>
<tr>
<td>Inclusion of other course readings/materials/concepts</td>
<td>Lack of connection to course content</td>
<td>Makes some good connections to course content</td>
<td>Makes several clearly considered connections to multiple course sources</td>
</tr>
<tr>
<td>Application to personal or professional</td>
<td>Provides limited application of topic to personal or professional life</td>
<td>Provides some good applications</td>
<td>Provides strong applications of topic to personal and/or professional life grounded in the research.</td>
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Online discussion and participation (ongoing) (20 points)

This course takes place exclusively online using the Moodle discussion feature. There are 8 weeks of intense work to complete this course. The expectation is that you will check the postings daily and respond.
with substantive reactions to at least 2 postings per week (sometimes 3) for a total of at least 20 responses/reflections for the term (1 point each).

The papers are designed to stimulate discussion on the discussion forum, so be sure to check and read your classmates’ papers. This activity should engage you in the topics of the readings and learning modules as though we were meeting in person. Please be sure to engage in the discussions every week beyond just the minimum.

1 point=reflection/response/reaction shows a depth of analysis and consideration of the content covered in the readings
.5 point=reflection/response/reaction is thoughtful but lacks consideration of the reading content
0=no response

Online discussions are an essential component of this course. The expectation is that you will participate fully in these. Please read carefully ALL of the comments and reactions posted on the discussion board and comment as though these were happening in a live class. My comments on individual papers are meant as a teaching tool for everyone. The discussion board is the online version of a live class. Please be a full participant in this part of the course.

Remember: What you get out of a learning experience is directly related to what you put into it.

**Final self-evaluation (5 points)**

What are the “top-10” takeaways that you have taken from this course? What might you do differently as a result of this course? What did you find most useful?

**Final grades**

Paper 1=25 points
Paper 2=25 points
Final project =25 points
Discussions=20 points
Self-Evaluation=5 points

Out of 100 points
A=96-100
A-=90-95
B+=87-89
B=84-86
B-=80-83
C+=77-79
C=74-76
C-=70-73
F=69 or below

**Course Calendar/Agenda**

**Course Timeline**
This course includes 8 weeks of intense work. In the Summer, this means that there are no breaks, but 8 weeks of solid work. During the academic year terms there are periods for breaks (Fall, Holiday, Spring breaks etc.). The course timeline is structured as follows:

<table>
<thead>
<tr>
<th>Week</th>
<th>What you should be reading</th>
<th>What you should be doing</th>
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</thead>
<tbody>
<tr>
<td>September 1-8</td>
<td><em>Brain Rules</em> through rule 4</td>
<td>Post by July 8: Introduction assignment</td>
</tr>
<tr>
<td>September 8-15</td>
<td><em>Brain Rules</em> rules 5-8 Watch videos on “Brain Rules website”</td>
<td>Post thoughts, reactions, musings about chapters so far…</td>
</tr>
<tr>
<td>September 15-22</td>
<td>Finish <em>Brain Rules</em></td>
<td>Paper 1 due September 22nd</td>
</tr>
<tr>
<td>September 22-29</td>
<td>Read Willingham Chapters 1-3 and watch videos on Willingham’s website</td>
<td>Post reactions to readings and videos</td>
</tr>
</tbody>
</table>
| September 29-Oct 6 | Read Willingham book chapters 4-7  
Read article “Teaching and Assessing Thinking to Cultivate 21st Century Skills” by Kimberly Williams and David Hyerle (second article in the journal starting on p. 7) [https://www.techvalleyhigh.org/pdfs/May_11/Impact.pdf](https://www.techvalleyhigh.org/pdfs/May_11/Impact.pdf) | Post reactions to readings/video and reactions to others’ postings                      |
| Oct 6-20        | Finish Willingham book and write paper/narrative/develop poster                           | Paper 2 due October 20                                                                   |
| Oct 20-27       | Start research for final project: Find original research/peer reviewed articles on a learning-related topic of your choice (use PSU library databases for more online readings) | Post your idea(s) for your final project                                                   |
| Oct 27-Nov 10   | Continue to read/research more on a topic of your choice and submit your final project (be creative) | Final project due to be posted November 17                                                   |
| Nov 10-24       | Final self reflection to include key take-away ideas from the course—what were your “top 10” takeaways | Post final self assessment by November 24 all posts complete by November 27th              |

All materials must be complete and submitted by November 27th at noon.

Please note that the expectation is that you are responding regularly to your classmates’ postings/papers/projects for the days that follow a post. Please try to respond at least to the person who posts right before you and the person who posts right after you.
Conceptual Framework

PSU College of Graduate Studies Program Hallmarks

- Leadership and Advocacy
- Reflection and Innovation
- Scholarship and Application
- Professionalism and Service
- Global Awareness and Social Responsibility

University Policies and Procedures

- **ADA Policy**: Plymouth State University is committed to providing students with documented disabilities equal access to all university programs and facilities. If you think you have a disability requiring accommodations, you should contact the PASS office in Lamson library (535-2270) to determine whether you are eligible for such accommodations. Academic accommodations will only be considered for students who have registered with the PASS Office. If you have a Letter of Academic Accommodation for this course from the PASS office, please provide the instructor with that information privately so that adaptations can be made to meet your needs. Course materials online comply with the Web-based Intranet and Internet Information and Applications Standards in accordance with ADA Section 508.

- **Academic Integrity**: Academic integrity is the foundation of the pursuit of knowledge. All members of the academic community are expected to be dedicated to the pursuit of knowledge in an honest, responsible, respectful, and ethical manner. Every violation of academic integrity is an affront to the academic community. Violations of academic integrity make fair evaluation impossible and cast doubt upon the seriousness with which students accept the responsibility of acquiring an education. Members of the academic community are expected to report all instances of those violations of academic integrity that come to their attention. Both faculty and administration consider it their duty, as guardians of academic standards and intellectual honesty, to enforce the academic integrity policy by prosecuting all cases of violation of academic integrity to the fullest extent. Students are urged to consider that it is the toleration of violations of academic integrity, and not the reporting of it, that is dishonorable. Please refer to the Graduate Catalog for more information and the entire policy.

- **Sensitive Materials**: Material in this course, in some instances, may be sensitive or emotionally provocative. As you review the syllabus, or at any time during the course, please let your instructor know if you anticipate, or are having, a problem with any assignment or classroom activity. We can then discuss how this assignment or activity is necessary for meeting course competencies and whether an alternative assignment or activity can be considered. We can also discuss campus resources that you may find helpful in dealing with your concerns.

- **Plymouth State University Curtailed Operations Information**: Plymouth State University normally remains open through inclement weather. Because most students live within minutes of the campus, every effort is made to avoid an official closing. There may be times, however, when an emergency or extreme weather conditions necessitate a general closing of the University.

Please sign up for PSU Alert Emergency Text Messaging at: plymouth.edu/alerts

Following are the PSU curtailed operations and/or class cancellation notification procedures: In the event of severe weather or an emergency, the University Administration will do all it can to decide on and post notifications of class/event cancellations and/or facility closures by 6:00 a.m. for classes running during the day. For canceling evening classes, the decision is usually made and
communicated no later than 3:00 p.m. Every effort will be made to make the decision as early as possible. If you are wondering, call the storm line (603-535-3535) or check the PSU website.

Use your own judgment about travel during inclement weather; the best choice is the one that keeps you safe. Notify your instructor(s) if you have to miss a class.

- **Lamson Library and Learning Commons**
  Access to the IT Help Desk is available at 603-535-2929. Log in to MyPlymouth to access all of the Lamson Library and Learning Common resources and services. The Writing Center and the PASS office are located in the lower level of Lamson; the Help Desk is on the Main Floor.