

Psychology 325 01: Educational Psychology

Fall, 2024

T/Th 10:00 – 11:15 am, 102 Lake Huron Hall

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Office Hours: T/Th 1:00 to 2:00 or by appointment.

Prerequisite:

Psychology 101: Introductory Psychology

Readings:

Journal articles and book chapters that can be obtained through Blackboard. A link to each article is embedded in the folder of the week in which it will be read. The References section at the end of the syllabus lists the articles we will read.

Technology requirements:

In order to be successful in the course, you will need access to a computer or other device that has a) high-speed internet b) a sound card and speakers. You will need to be able to open and save Word (.docx) and PDF (.pdf) files. If you have technology questions while taking this course, please contact the helpdesk at GVSU (helpdesk@gvsu.edu or 616-331-3513).

How the course will work:

The topics will be set up as modules in Blackboard. Most modules correspond to a week, but some are two weeks. In each module, you will typically find the reading for that week, an "assignment" to upload a reflection or short paper, sometimes a recorded lecture, and any other information you need for the week. You should complete the reading and study the online lecture before the day you come to class. If you read and watch the lecture before class, you will understand the class better. In fact, as part of this course, we will discuss psychological studies that show that, on average, you will understand class better if you read the material beforehand! Class periods will involve some lecture, class discussions and activities that relate to the online material and lectures. The purpose of uploading some lecture material is to give us more time for interaction during class.

In this class, some of the material may be familiar from previous classes. But you should also expect to find some of the material new and challenging. There are multiple avenues of help for material that you find difficult. First is to come to office hours and discuss the material with me. In addition, as a GVSU student, you have access to all of the campus academic resources. Here is a list of those resources:

<https://www.gvsu.edu/sasc/academic-resources-107.htm>. These resources are excellent and are there to help you be successful in all your courses, so please utilize them!

Course objectives:

This course is designed to provide an introduction to the psychology of learning and how it applies to education. We will address the methods used in research on learning, and some of the important theories and principles related to learning. In addition, we will discuss how research on learning can be relevant to what teachers do in the classroom.

The following objectives are listed in the Syllabus of Record for the course. This list represents things students should be able to do by the end of the course:

1. Describe how the science of psychology can inform our understanding of teaching and learning.
2. Explain how the use of scientific research methods is relevant to educational psychology and highlight its enormous value in adjudicating conflicting positions in educational matters.
3. Summarize the implications of some current research on psychology on our understanding of how people learn.
4. Illustrate effective teaching and learning strategies that are geared towards maximizing student learning.

Some of the specific topics we will cover include memory, reading processes, strategies for studying and teaching, transfer of knowledge to new situations, teacher and student beliefs, metacognition, and student interest. Throughout the course, there will be a primary focus on using psychological research methods to study how people learn, and how educational practices may be guided by research. Another goal of the course is to make you informed consumers of psychological research so that you can effectively evaluate claims about what sorts of things will help students learn effectively.

One way that might be helpful to think about this class is to consider a common phrase people use to describe teaching. Many people say that "teaching is an art." I think what people mean by this phrase is that teachers should use their intuition, creativity, and experience to inspire and motivate students, and to get students to love learning. All of these are noble goals. But through the course of the semester, I will try to show you that a more appropriate phrase may be "teaching is both an art and a

science." If teachers rely solely on intuition, creativity, and experience to make decisions about what to teach and how to teach it, they will often end up using teaching methods that are ineffective. It is also important to pay attention to the scientific study of learning and teaching. Scientific studies suggest to us that there are more and less effective ways of learning. In addition, lots of studies tell us that our own intuitions about what is effective are often wrong. In many cases, people's intuitions about what is effective for learning are the exact opposite of what is actually effective. You can think of this class as introducing you to the scientific side of the phrase "teaching is both an art and a science."

A single experiment rarely provides a definitive answer to a question about psychological processes. Alternative interpretations and contradictory experimental results can be common. Therefore, critical thinking about the issues we discuss will be a focus in this course.

Attendance:

The class periods will help you to better understand the material that is covered in the book and the readings. Material is also presented in class that will not be in the readings or online videos and Powerpoint files. You need to be in class in order to be successful in the course.

Examinations:

There will be **three** exams given in this course, two during the semester and one on the day of the final. The final exam will be **cumulative**. The final will have more questions from the last third of the semester than the first two thirds, but it will cover material from the entire course. Each exam will cover the material that has been presented in the book, readings, lectures, videos, and discussions. All of the exams will include multiple choice and short essay questions. The first two exams will be worth 40 points each, and the final will be worth 60 points. For all exams, **you may use any notes you have written**. Notes include hand-written or typed notes, or notes you wrote on printed out slides. You may **not** use printouts of other material, such as journal articles, or any electronic devices such as laptops or phones. Please do not confuse having open note exams with them being easy or indicating that you do not need to study. The exam questions will be written to test your **understanding** of the material more than just your memory for the material. For most questions, you will not be able to simply copy answers straight out of your notes. This means that when you study, you should keep track of whether you understand the material.

You are expected to be present for each exam. Make-up exams will **only** be given in the case of an injury or illness, or if there is a death in the family. In each case, you must notify the instructor within 24 hours of the exam, and you must be prepared to provide documentation regarding your situation. Make-up exams will be given as soon

as possible after the exam, and the format of the exam is left to the discretion of the instructor.

Reflections on material (10 points each):

Throughout the semester, you will write short reflection papers in which you relate the course material to the goals of the class and to education more broadly. Reflections need to be a minimum of 50 words. The goal of the reflections is to get you to think clearly about how the course material may be relevant to education outside the confines of this class. For each reflection you should do two things: 1) Describe how you think the material for the week might be relevant to education. 2) State clearly which experiment or information specifically relates to your first point.

In order to get full credit, you need to clearly describe the information you are referring to so I can tell that you understood it. For example, you might say "this point is made by the Mannes and Kinstch (1987) study." In this case, I don't know if you know what happened in that study or what it meant. You should describe what happened (briefly) in the study and how it relates to your point. You are free to write about whichever aspect of the material you want. The point is that you should think deeply about the material and how it can apply to education.

Each reflection is worth **ten points. Scores on the reflections will be 10, 7, 5, or 0. The reflections for each week will be due on Friday at 11:59 pm of that week.** The syllabus indicates which weeks they are due. Generally we will not have reflections in weeks in which we also have an exam. The lowest reflection grade will be dropped.

Short assignments (15 points each - one page maximum for each assignment). All short assignments need to be uploaded to the Assignments page in Blackboard by class time on the day they are due.

#1 (due 9/10 at 10:00 – by class time): We will discuss the paper by Hirsh (2002) and some research that is relevant to the points he raises about educational research. Your assignment is to write two "deep questions" about this paper so that we can have a better discussion of it in class. A deep question (compared to a surface question) is one that asks about an important or fundamental aspect of the article. Your questions should be substantive enough that they demonstrate that you read the article carefully and have thought about the implications of it. They can be actual questions about something you did not understand, or they can be comments. Either way, you need to elaborate on your question or comment in enough detail that it is clear to the reader that you read and thought about the paper. You can also think of these questions as ones that you would be willing to read aloud to the class for the purpose of stimulating discussion.

Each question should be one well-developed paragraph.

2 (due 12/3 at 10:00 – by class time). In the last week of class you will turn in a brief written assessment of the two papers that are assigned for that week. The writing assignment will also serve as the basis for a class discussion that we will have during that week.

For this assignment, you should address a particular issue within the learning styles literature as it relates to the two papers that are assigned for the last week of class (Massa and Mayer, 2006; Zapalska & Dabb, 2002). The *learning styles hypothesis* is a phrase that refers to the basic claim, often made in the learning styles literature, that students will learn best if they are given information in their preferred modality. Multiple authors (eg. Massa and Mayer, 2006; Pashler, et. al., 2010) have argued that there is a particular pattern of evidence that should be found in order to establish support for the learning styles hypothesis. A study should be able to identify at least two different groups of learners (visual and verbal, for example.) Then students should be assigned to all learn the same content, but the content should be presented in one modality or the other (visually or verbally.) Then all students take the same test over the content. Support for the hypothesis would be found if the visual learners score higher when studying content in the visual modality, and the verbal learners score higher when studying content in the verbal modality. Massa and Mayer (2006) refer to this pattern as an aptitude by treatment interaction, or the ATI hypothesis. Other patterns of results, such as **everyone** scoring higher with the visual modality, would not provide support for the hypothesis. Experiments that do not present information in multiple modalities and test learning of it would be unable to provide support for this hypothesis because they wouldn't have the right experimental setup.

In this assignment, you should write a brief (one paragraph per article) statement about the extent to which each of the articles provides (or does not provide) evidence that supports the learning styles hypothesis. You do not need to write a summary of the article. Just get straight to the question of whether the article provides or does not provide evidence that would count as supporting the hypothesis, and explain your response.

GVSU course policies:

This course is subject to the GVSU policies listed at <http://www.gvsu.edu/coursepolicies>

At this website you can find all policies related to such topics as academic integrity, disabilities, inclusion, and discrimination. Please note that you are responsible for knowing and following the policies that are listed here. It is a good idea to read through them to familiarize yourself with them.

Academic Integrity (statement from the Faculty Teaching and Learning Center):

Truth and honesty: The principles of truth and honesty are recognized as fundamental to a community of teachers and scholars. The university expects that both faculty members and students will honor these principles and in so doing protect the validity of university grades. This means that all academic work will be done by the student to whom it is assigned without unauthorized aid of any kind. Instructors, for their part, will exercise care in the planning and supervision of academic work, so that honest effort will be positively encouraged. Compliance shall include compliance with the following specific rules:

1. No student shall knowingly procure, provide, or accept any materials which contain questions or answers to any examination or assignment.
2. No student shall complete, in part or in total, any examination or assignment for another person.
3. No student shall knowingly plagiarize or copy the work of another person, or entity, and submit it as his or her own.
4. No student shall submit work that has been previously graded or is being submitted concurrently to more than one course without authorization from the instructor(s) of the class(es) to which the student wishes to submit it.

Psych friends peer-to-peer mentors:

Psych Friends mentors are upper-level psychology and behavioral neuroscience students who are trained to provide support in many areas, such as: effective studying and time management techniques, exam preparation and reflection skills, understanding the PSY and BNS major requirements, potential jobs and careers in the field, the process of applying for graduate school, and how to maintain physical and mental health as a student. Visit <https://www.gvsu.edu/navigate> to schedule an online or in-person meeting today.

Plagiarism and Artificial Intelligence:

You must write all assignments in your own words. If you copy phrases or sentences from any source without quoting them, that is plagiarism. If any work you turn in is plagiarized, you will earn a 0 for the assignment, and may fail the course. I encourage you to talk to me if you have any questions about plagiarism.

You also may not use any AI platform to produce work that you turn in. Note that I test assignments on AI platforms to see what sort of responses they generate. If I am unsure whether you have used AI to produce a writing assignment, I may ask you to explain it to me in your own words.

Grading:

Your final grade for the course will be a combination of the scores on each of the exams (140 points total), 80 points for the reflections, and 30 points for the two short assignments. All grades will be represented as percentages. Letter grades will be assigned based on the following scale:

93 – 100%	A
90 – 92%	A-
87 – 89%	B+
83 – 86%	B
80 – 82%	B-
77 – 79%	C+
73 – 76%	C
70 – 72%	C-
67 – 69%	D+
60 – 66%	D
0 – 59%	F

This scale may be adjusted to make grades higher at the discretion of the instructor, but it will not be adjusted to make grades lower.

Tentative Schedule of Topics

Week of	Topic	Reading	Due this week
8/26 – 8/30	Introduction and Research Methods	Openstax Psychology textbook, Chapter 2	Reflection 1
9/2 – 9/6	Introduction and Research Methods	Openstax Psychology textbook, Chapter 2	Reflection 2
9/9 – 9/13	Interpreting Educational Research / Studying Big Educational Questions Short assignment #1 due 9/10 at 10:00	Hirsch, 2002	Short assignment #1 (Tuesday)
9/16 – 9/20	Basic Components of Memory	Openstax Psychology textbook, Chapter 8	Reflection 3
9/23 – 9/27	Exam 1: 9/24 Testing		Exam 1 (Tuesday)
9/30 – 10/4	Knowledge Organization and Learning	Kintsch, 1994	Reflection 4
10/7 – 10/11	Learning and Prior Knowledge	Wolfe & Bowdle, 2024; O'Reilly, Wang, & Sabatini, 2019	Reflection 5
10/14 – 10/18	Variability During Knowledge Acquisition	Rohrer, Dedrick, & Stershic, 2015	Reflection 6
10/21 – 10/25	10/22 – No class (Fall break) Variability During Knowledge Acquisition	Sana & Yan, 2022	
10/28 – 11/1	Spacing During Knowledge Acquisition	Rohrer & Taylor, 2006	Reflection 7
11/4 – 11/8	Exam 2: 11/5 Metacognition 11/8 5:00 PM. – Drop deadline with grade “W”	Thiede & de Bruin, 2018	Exam 2 (Tuesday)
11/11 – 11/15	Metacognition / Beliefs and Misconceptions	Hornsey, 2020	Reflection 8
11/18 - 11/22	Beliefs and Misconceptions		Reflection 9
11/25 – 11/29	Interest and Learning 11/28 – No class (Thanksgiving)	Bender et al., 2021	
12/2 – 12/6	Research Methods Revisited Short assignment #2 due 12/3 at 10:00	Zapalska & Dabb, 2002; Massa & Mayer, 2006	Short assignment #2 (Tuesday)
Final exam	Thursday 10/12 at 10:00 to 11:50		

References

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<https://doi.org/https://doi.org/10.1002/acp.3822>
- Hirsch, E. D. J. (2002). Classroom research and cargo cults. *Policy Review, 115*, 51-69.
- Hornsey, M. J. (2020). Why facts are not enough: Understanding and managing the motivated rejection of science. *Current Directions in Psychological Science, 29*(6), 583-591. <https://doi.org/https://doi.org/10.1177/0963721420969364>
- Kintsch, W. (1994). Text comprehension, memory, and learning. *American Psychologist, 49*, 294-303.
- Massa, L. J., & Mayer, R. E. (2006). Testing the ATI hypothesis: Should multimedia instruction accommodate verbalizer-visualizer cognitive style? *Learning and Individual Differences, 16*, 321-335.
- Openstax Psychology (textbook): <https://openstax.org/books/psychology/pages/2-introduction>
Note: Chapters 2 (research methods) and 8 (memory) can both be accessed through this link.
- O'Reilly, T., Wang, Z., & Sabatini, J. (2019). How much knowledge is too little? When a lack of knowledge becomes a barrier to comprehension. *Psychological Science, 30*(9), 1344-1351. <https://doi.org/http://dx.doi.org/10.1177/0956797619862276>

- Rohrer, D. Dedrick, R. F., & Stershic, S. (2015). Interleaved practice improves mathematics learning. *Journal of Educational Psychology, 107*, 900-908.
- Rohrer, D., & Taylor, K. (2006). The Effects of Overlearning and Distributed Practise on the Retention of Mathematics Knowledge. *Applied Cognitive Psychology, 20(9)*, 1209-1224. <https://doi.org/http://dx.doi.org/10.1002/acp.1266>
- Sana, F., & Yan, V. X. (2022). Interleaving retrieval practice promotes science learning. *Psychological Science, 33(5)*, 782-788.
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- Thiede, K. W., & de Bruin, A. B. H. (2018). Self-regulated learning in reading. *Handbook of Self-regulated Learning and Performance*. (pp. 124-137): Routledge / Taylor and Francis Group, New York, NY.
- Wolfe, M. B. W., & Mienko, J. A. (2007). Learning and memory of factual content from narrative and expository text. *British Journal of Educational Psychology, 77*, 541-564.
- Zapalska, A. M., & Dabb, H. (2002). Learning styles. *Journal of Teaching in International Business, 13*, 77-97.