

University of  
Lethbridge



Faculty of Education

## Education 5850 (OL)

### Introduction to Cognition and Learning

Master of Education (General) Teaching, Learning and

Neuroscience

Summer, 2020

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#### Calendar Description

This course examines seminal and contemporary research and scholarship that highlight models of cognitive psychology, with particular focus on its applications within educational settings. Topics may include memory formation, models of learning, factors that affect processing, attentional control, and self-regulation.

#### Course Rationale

Contrary to the claims of advertisers of learning toys or memory apps, which often suggest that memory and learning are easily improved by playing a particular game or by listening to a particular style of music, *learning is not simple process*. Since the middle of the 20<sup>th</sup> century, the field of cognitive psychology has been dedicated to understanding the mechanisms that can affect the efficiency of learning processes, such as memory encoding and retrieval, attention, working memory, cognitive load, emotional control, and processing. Considering how closely aligned the goals of cognitive psychology are with the practice of teaching, it might seem peculiar that professional development materials are not always based on the evidence from cognitive psychology. To help educators to connect theory to practice, this course examines the fundamental tenets of cognitive psychology, especially the factors that have direct application to the classroom.

#### Course Objectives

Students will demonstrate:

1. Familiarity with the assumptions and perspectives of the field of cognitive psychology
2. Comprehension of the theories and practical applications of models of learning and regulation
3. Critical thinking, as it relates to the use of evidence-based practices in the classroom

## Academic Accommodations for Students with Disabilities Policy

If you are a student requiring academic accommodations to complete the required activities and/or assignments, please follow the procedures outlined in the [University Calendar](#). You are encouraged to contact the [Accommodated Learning Centre](#) for guidance and assistance.

## Course Schedule

The course runs every day in the afternoon (1pm-4pm) for three weeks, beginning on July 6<sup>th</sup> and finishing on July 24<sup>th</sup>. The course is framed by five module topics, which will guide readings, discussions, and course assignments. The five module topics are followed by an opportunity for graduate students to study an area of interest, as it relates to cognitive psychology. Mandatory attendance for all classes is required. In exceptional circumstances where you will be absent, notify the instructor in advance.

### Module 1. Theory to Practice (Case study: Gardner's Multiple Intelligences)

- Factors that affect translation of theory to practice
- Conceptions of intelligence over the last several decades

### Module 2. Cognitive Psychology as a field of study

- Assumptions and perspectives within the field of cognitive psychology
- Helping learners coordinate categories of cognitive processes

### Module 3. Working memory

- Limits and capacities of working memory
- Processes of memory formation and retrieval

### Module 4. Cognitive load theory and instructional design

- Element interactivity and cognitive architecture
- Applying the findings of clinical studies to the classroom

### Module 5. Metacognition and self-regulation

- Models of self-regulation, executive functioning
- Social information processing, self-efficacy

## Course Materials

Required Readings - All required readings will be available for download either through the course website or through the uLeth Library Summons. A list of the readings can be found in the tables below.

All writing has to follow the guidelines according to American Psychological Association. (2019). Publication Manual of the American Psychological Association (7th ed.). Washington, DC: Author.

## TENTATIVE Course Schedule

		<b>July 6</b>	<b>July 7</b>	<b>July 8</b>
Module 1: Theory and practice Gardner's Learning Styles	Required Readings	Schneider, J. (2014). Howard Gardner's Multiple Intelligences. <i>From the ivory tower to the schoolhouse: How scholarship becomes common knowledge in education</i> . Cambridge, MA: Harvard Education Press	Kirschner, P. A., & van Merriënboer, J. J. (2013). Do learners really know best? Urban legends in education. <i>Educational Psychologist</i> , 48(3), 169–183.	Gardner, H. (1983). Linguistic intelligence. <i>Frames of mind: The theory of multiple intelligences</i> . Hachette, UK: Basic Books.
	Readings for Assignment 2	Moran, S., Kornhaber, M., & Gardner, H. (2009). Orchestrating multiple intelligences. <i>Kaleidoscope: Contemporary and Classic Readings in Education</i> , 188–192.		
	Notes	Fallace, T. (2019). The ethnocentric origins of the learning style idea. <i>Educational Researcher</i> , 48(6), 349–355.		
		Be sure to start developing quiz questions for assignment (assignment #1). If you choose to complete a Reading Response, it's due on July 7 <sup>th</sup> .		

		<b>July 9</b>	<b>July 10</b>
Module 2: Educational psychology as a field	Required Readings	Sternberg, R. J., & Sternberg, K. (2016). Introduction to cognitive psychology. <i>Cognitive psychology</i> . Boston, MA: Nelson.	Schwartz, D. L., & Goldstone, R. (2015). Learning as coordination: Cognitive psychology and education. In <i>Handbook of educational psychology</i> (pp. 61-75). Routledge.
		Ball, D. L., & Forzani, F. M. (2007). What Makes Education Research "Educational"? <i>Educational Researcher</i> , 36(9), 529–540.	
	Readings for Assignment 2	Gardner, H. (1987). <i>The mind's new science: A history of the cognitive revolution</i> (pp. 28–45). New York, NY: Basic Books.	
Notes	Bruner, J. (1985). Models of the learner. <i>Educational Researcher</i> , 14(6), 5–8.		
		Be sure to continue developing quiz questions for assignment (assignment #1). If you choose to complete a Reading Response, it's due on July 9 <sup>th</sup> .	

		<b>July 13</b>	<b>July 14</b>
Module 3: Working memory	Required Readings	Baddeley, A. (2012). Working memory: Theories, models, and controversies. <i>Annual review of psychology</i> , 63, 1–29.	[video] MacCormack, J. (2020, March 05). <i>How we learn: Baddeley's working memory model, Part 1&amp;2</i> . Retrieved June 11, 2020, from <a href="https://www.scrappyteachers.com/videos">https://www.scrappyteachers.com/videos</a>
	Readings for Assignment 2	Miller, G. A. (1956). The magical number seven, plus or minus two: Some limits on our capacity for processing information. <i>Psychological Review</i> , 63(2), 81–97.	
	Notes	Baddeley, A. (2000). The episodic buffer: a new component of working memory? <i>Trends in Cognitive Sciences</i> , 4(11), 417–423.	
		Assignment #1 is due on July 14 <sup>th</sup> . If you choose to complete a Reading Response, it's due on July 13 <sup>th</sup> .	

Module 4 Cognitive load		<b>July 15</b>	<b>July 16</b>
	Required Readings	Paas, F., Van Gog, T., & Sweller, J. (2010). Cognitive load theory: New conceptualizations, specifications, and integrated research perspectives. <i>Educational Psychology Review</i> , 22(2), 115–121.	Sweller, J., van Merriënboer, J. J., & Paas, F. (2019). Cognitive architecture and instructional design: 20 years later. <i>Educational Psychology Review</i> , 1–32.
	Readings for Assignment 2	Sweller, J., & Paas, F. (2017). Should self-regulated learning be integrated with cognitive load theory? A commentary. <i>Learning and Instruction</i> , 51, 85–89.  Sweller, J. (2010). Element interactivity and intrinsic, extraneous, and germane cognitive load. <i>Educational Psychology Review</i> , 22(2), 123–138.	
	Notes	Be sure to start developing quiz questions for Assignment #1. If you choose to complete a Reading Response, it's due on July 15 <sup>th</sup> .	

Module 5 Metacognition and EF (self-reg, socio-emotional, play, motivation)		<b>July 17</b>	<b>July 20</b>	<b>July 21</b>
	Required Readings	Schunk, D. H., & DiBenedetto, M. K. (2020). Motivation and social cognitive theory. <i>Contemporary Educational Psychology</i> , 60, 1–10.	Zelazo, P. D., Blair, C. B., & Willoughby, M. T. (2016). Executive Function: Implications for Education. NCER 2017-2000. <i>National Center for Education Research</i> . (pp. 1–27)	Crick, N. R., & Dodge, K. A. (1994). A review and reformulation of social information processing mechanisms in children's social adjustment. <i>Psychological Bulletin</i> , 115, 74–101.
	Readings for Assignment 2	Shanker, S. (2016). Calm, alert, and learning: Cognitive domain. <i>Self-reg: How to help your child (and you) break the stress cycle and successfully engage with life</i> (pp. 131-158). Toronto, ON: Penguin.  Hoy, A. W., Hoy, W. K., & Davis, H. A. (2009). <i>Teachers' self-efficacy beliefs</i> . In K. R. Wenzel & A. Wigfield (Eds.), <i>Handbook of motivation at school</i> (p. 627–653). Routledge/Taylor & Francis Group.		
	Notes	Assignment #1 is due on July 22 <sup>nd</sup> . If you choose to complete a Reading Response, it's due on July 20 <sup>th</sup> . The remaining days (July 22, 23, 24) will be focused on Assignment #3.		

#### GRADING SCHEDULE FOR GRADUATE CLASSES

Numeric Value	Letter Grade	Grade Point
97 – 100	A+	4.00
93 – 96	A	4.00
90 – 92	A-	3.70
87 – 89	B+	3.30
83 – 86	B	3.00
80 – 82	B-	2.70
77 – 79	C+	2.30
73 – 76	C	2.00
70 – 72	C-	1.70
67 – 69	D+	1.30
63 – 66	D	1.00
<63	F	0.00

Note: Any course with a grade of less than **B-** cannot be considered for credit in a Faculty of Education **master's** level program. Any course with a grade of less than **B** cannot be considered for credit in a Faculty of Education **doctoral** level program.

## Course Assignments and Evaluation

There are three assignments for this course. Completion of each assignment is required for passing the course. Written assignments must be submitted as PDFs by email before midnight (MST) on the due date, with the following format: LastName\_FirstName\_Assignment#\_duedate.pdf (e.g., MacCormack\_Jeff\_1\_July13.pdf). If the assignment options do not appeal to you, an alternative may be chosen, pending instructor approval. Additionally, the relative weight of the assignments can be adjusted, as necessary, again as determined through a conference with the instructor.

Assignments	Description	Value	Due
<b>1. DIY Quizzes</b>	You will compose the questions and the answers for two 20-point quizzes on the content in the course.	15+15	July 14, July 22
	You will review the questions and verify the answers for the quizzes of another student	5+5	
<b>2. Reading Responses</b>	Read three of the supplemental readings and prepare a 100-200 word response for each. You will share your response with the class and submit the response for evaluation. Your two highest scores will count.	15+15	Module 1 is due July 7; 2 is due July 9; 3 is due July 13; 4 is due July 15; 5 is due July 20.
<i>Choose one:</i> <b>3a. Outline + Opener</b>	Develop an outline for what might become your final project or thesis argument. You will develop the outline for the entire paper, but will only write the first section (rationale/lit review). 4-5 pages. Be prepared to share.	30	July 23
<u>OR</u> <b>3b. One Glorious Paper</b>	Select a paper (from the field of cognitive psychology) that offers a significant contribution to a topic relevant to your interests. Explain the argument/findings and the contribution offered by the paper. 4-5 pages. Be prepared to share. Submit paper with assignment.	30	July 23

### Evaluation Criteria

Assignment 1 DIY Quizzes	
Objective questions (e.g., multiple choice, T/F, matching) are written so all options are plausible	__/2
Subjective questions (e.g., short answer) allow for meaningful responses	__/2
Test questions are clearly stated, free from non-functional, extraneous language	__/4
Test answers reflect an understanding of the key ideas in the readings	__/7
Review of peer work is thorough and accurate	__/5

Assignment 2 Reading Responses	
Response demonstrates comprehension of reading	__/5
Logic line is coherent	__/3
Writing is efficient, accurate	__/2
Connections extend beyond the primary text	__/5

Outline + Opener	
Paper is logically organized (general to specific)	__/2
Positions are supported by evidence	__/2
Argument is formed with cited literature	__/4
Logic line of outline is coherent	__/7
Writing is efficient, accurate	

One Glorious Paper	
Paper is logically organized (general to specific)	__/4
Positions are supported by evidence	__/8
The "glorious" paper is contextualized within the literature	__/6
Logic line is coherent	__/6
Writing is efficient, accurate	__/6

Late assignments will lose 2% per calendar day, unless an extension was granted in advance of the due date. Extensions will only be granted in exceptional circumstances.

It is expected that your writing meets the expectations of a graduate level program, including abiding by the APA Publication Manual 7th edition. Writing must demonstrate appropriate standards of written communication; grammatical errors, lack of clarity, poor structure or organization are not acceptable.

## Student Conduct

Students are subject to the student discipline policy for academic and non-academic offences in accordance with the University Calendar.

Additionally, in the Faculty of Education graduate programs, students are required to adhere to the Standard of Professional Conduct as stipulated in the program specific section of the University Calendar, as well as the Standards of Practice/Conduct, Code of Ethics, and/or the Code of Professional Conduct for the field, as noted below.

- ATA Code of Professional Conduct  
<https://www.teachers.ab.ca/The-Teaching-Profession/ProfessionalConduct/Pages/default.aspx>
- College of Alberta Psychologists Standards of Practice:  
<http://www.cap.ab.ca/Portals/0/pdfs/StandardsOfPractice.pdf>
- Canadian Code of Ethics for Psychologists:  
<http://www.cpa.ca/aboutcpa/committees/ethics/codeofethics/>
- Canadian Counselling and Psychotherapy Association Code of Ethics:  
<http://www.ccpa-accp.ca>

## Academic Honesty

The University of Lethbridge subscribes to Turnitin.com, a plagiarism detection service. Please be advised that assignments submitted in this course may have their originality verified using this system.

## Privacy and Confidentiality

- Although we place a heavy emphasis in this course on your own school settings, practices, and data, it is imperative that we refrain from using personal identifying information in our dialogue.
- The personal information your classmates and instructor disclose to you should not be discussed with anyone outside the course, now or in the future, unless the author of the personal narrative has stated otherwise. Unless you have the person's specific permission, please do not mention identifying information about the person's story (e.g., no names, no agency) and keep the disclosure broad rather than specific.
- Recording lectures or class discussions is not permitted unless the instructor and all audience members have granted permission in advance.
- While faculty, staff, and students are expected to take all possible precautions to safeguard the personal information that is exchanged in each course, whether it be in discussion forms, web conferencing, recordings, assignments, etc. there is no guarantee of confidentiality.

## Withdrawal from an Online Course

If you have indicated in writing to your instructor that you will be withdrawing from an online course, your access to that course will need to be removed as soon as possible. You must notify the program staff immediately to complete the required paperwork.