



**College of Education and Human Development  
Division of Special Education and disAbility Research**

Fall 2024

EDSE 622 001: Philosophical and Conceptual Issues in Behavior Analysis

CRN: 74296; 3 – Credits

Instructor: Dr. Christine Barthold	Meeting Dates: 8/26/24 – 10/20/24
Phone: 703-691-6827	Meeting Day(s): Online
E-Mail: choffner@gmu.edu	Meeting Time(s): Asynchronous
Office Hours: By appointment	Meeting Location: Online
Office Location: Finley Building, Suite 100	Other Phone: N/A

***Note: This syllabus may change according to class needs. Teacher Candidates/Students will be advised of any changes immediately through George Mason e-mail and/or through their LMS (Learning Management System)***

**Prerequisite(s):**

Completion of EDSE 619 with a minimum of B- or XS or concurrent enrollment in EDSE 619.

**Co-requisite(s):**

Completion of EDSE 619 with a minimum of B- or XS or concurrent enrollment in EDSE 619.

**Course Description**

Focuses on basic principles and philosophies of behavior analysis. Identifies historical contributions to modern behavior analysis and identifies seminal individuals who have made an outstanding contribution to behavior analysis. Describes tenets of radical behaviorism. Emphasizes vocabulary and basic research that contributes to a modern understanding of behavioral principles.

**Course Overview**

This course provides instruction into philosophical underpinnings of behavior analysis, historical perspectives, and an overview of radical behaviorism.

### **Advising Contact Information**

Please make sure that you are being advised on a regular basis as to your status and progress through your program. Mason M.Ed. and Certificate teacher candidates/students should contact Student Services at 1-844-306-1785, [mason@support.edu.help](mailto:mason@support.edu.help) for assistance.

### **Advising Tip**

Did you know you can order an official transcript through Patriotweb? Logon to Patriotweb. Select Student Services. Select Student Records. Select Order Official Transcript.

### **Course Delivery Method**

Learning activities include the following:

1. Application activities
2. Small group activities and assignments
3. Video and other media supports
4. Research and presentation activities
5. Electronic supplements and activities via your LMS

This course will be delivered online (76% or more) using an asynchronous format via Mason's Learning Management system (LMS). You will log in to the course site using your Mason email name (everything before @masonlive.gmu.edu) and email password. The course site will be available in accordance with the posted start date.

- To access your course in Blackboard Learn: <https://mymasonportal.gmu.edu/>

Under no circumstances, may candidates/students participate in online class sessions (either by phone or Internet) while operating motor vehicles. Further, as expected in a face-to-face class meeting, such online participation requires undivided attention to course content and communication.

### **Technical Requirements**

To participate in this course, students will need to satisfy the following technical requirements:

- High-speed internet access with updated browsers.
  - [Blackboard Learn](https://help.blackboard.com/Learn/Student/Ultra/Getting_Started/Browser_Support) supported browsers:  
[https://help.blackboard.com/Learn/Student/Ultra/Getting\\_Started/Browser\\_Support](https://help.blackboard.com/Learn/Student/Ultra/Getting_Started/Browser_Support)
- Consistent and reliable access to GMU email and the course LMS, as these are the official methods of communication for this course.
- Speakers and a microphone or a microphone-enabled headset for use with the synchronous web conferencing tools.
- Note that students may be asked to create logins and passwords on supplemental websites and/or to download trial software to their computer or tablet as part of course requirements.

- Screen Capture Video software, such as Screencast-O-Matic
- Technical Support 24/7
  - chat: <https://support.edu.help>
  - call: 1-844-306-1785
  - e-mail: [Mason@support.edu.help](mailto:Mason@support.edu.help)

## Expectations

- Course Week:  
Because asynchronous courses do not have a “fixed” meeting day, our week will start on Tuesday and finish on Monday. Students will be expected to meet with their groups, which will be scheduled at the convenience of the group.
- Log-in Frequency:  
Students must actively check the course LMS site and their GMU email for communications from the instructor, class discussions, and/or access to course materials at least 5 times per week. In addition, students must log-in for all scheduled online synchronous meetings.
- Participation:  
Students are expected to actively engage in all course activities throughout the semester, which includes viewing all course materials, completing course activities and assignments, and participating in course discussions and group interactions.
- Technical Competence:  
Students are expected to demonstrate competence in the use of all course technology. Students who are struggling with technical components of the course are expected to seek assistance from the instructor and/or College or University technical services.
- Technical Issues:  
Students should anticipate some technical difficulties during the semester and should, therefore, budget their time accordingly. Late work will not be accepted based on individual technical issues.
- Workload:  
Please be aware that this course is **not** self-paced. Students are expected to meet *specific deadlines* and *due dates* listed in the **Class Schedule** section of this syllabus. It is the student’s responsibility to keep track of the weekly course schedule of topics, readings, activities and assignments due.
- Instructor Support:  
Students may schedule a one-on-one meeting to discuss course requirements, content or other course-related issues. Those unable to come to a Mason campus can meet with the instructor via telephone or web conference. Students should email the instructor to schedule a one-on-one session, including their preferred meeting method and suggested dates/times.

- Netiquette:  
The course environment is a collaborative space. Experience shows that even an innocent remark typed in the online environment can be misconstrued. Students must always re-read their responses carefully before posting them, so as others do not consider them as personal offenses. *Be positive in your approach with others and diplomatic in selecting your words.* Remember that you are not competing with classmates but sharing information and learning from others. All faculty are similarly expected to be respectful in all communications.

### **Learner Outcomes**

1. Compare and contrast methodological and radical behaviorism.
2. Identify the differences among basic principles, applied behavior analysis, and service delivery.
3. Define, describe, and identify basic philosophical assumptions of applied behavior analysis.
4. Define, describe, and identify the concepts and philosophy of respondent behavior and respondent conditioning.
5. Define, describe, and identify the concepts and philosophy of operant behavior and operant conditioning.
6. Define, describe, and exemplify operant and respondent principles.
7. Define, describe, and exemplify operant and respondent procedures.
8. Describe and identify factors affecting behavioral variables.
9. Describe and explain behavior using an operant and/or respondent paradigm.

### **Professional Standards**

This course is offered by the George Mason University Division of Special Education and disability Research. The goal of our special education programs is to improve the lives, productivity, and education of persons with disabilities. The content of the courses in this program is derived from the 5<sup>th</sup> Edition Task List published by the national Behavior Analyst Certification Board (BACB) as well as the Ethics Code for Behavior Analysts. The Ethics Code for Behavior Analysts is listed on the following website: <https://www.bacb.com/wp-content/uploads/2020/11/Ethics-Code-for-Behavior-Analysts-2102010.pdf> . For more information on the Board and the examination, please visit the Board's website at [www.bacb.com](http://www.bacb.com).

### **Required Texts**

Catania, A.C. (2017). *The ABCs of Behavior Analysis: An Introduction to Learning and Behavior*. Cornwall on Hudson, NY: Sloan. **PLEASE NOTE THAT THE *LEARNING BOOK IS NOT THE SAME BOOK FOR THIS COURSE. Do not purchase the *Learning* text.***

(It is recommended, if at all possible, to purchase these materials directly from the Sloan website. Other outlets often have significant delays that put students at a disadvantage.)

## Recommended Texts

American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.). <https://doi.org/10.1037/0000165-000>

Johnston, J.M. (2014). *Radical Behaviorism for ABA Practitioners*. Cornwall on Hudson, NY: Sloan. (This book is currently out of print but may be available from selected re-sellers.

## Required Resources

*CyberRat*. Can be purchased through the following link:

<http://www.ai2inc.com/Products/products.html> - note that this program only works on desktops and laptops. It will not run on tablets, phones, or Chromebooks.

## Additional Readings

Additional Readings can be found on the LMS.

## Course Performance Evaluation

Students are expected to submit all assignments on time in the manner outlined by the instructor.

### Assignments and/or Examinations

**Video Introduction.** Students will post a video introducing themselves and answering questions posed by the instructor.

Presentation guidelines: Any media is allowed, so be creative. No voice over PowerPoint, and no Word papers. Ideas: record a video, write a song, create a visual infographic, do a Prezi, create a Podcast, etc. Presentations should be 2-3 minutes in length if using video or audio.

Follow up with at least two classmates (who do not yet have responses to their presentations). Your response should be thoughtful, substantial, polite and more extensive than a simple "well done" phrase or "I agree." Consider points of agreement, disagreement, assumptions, and value judgments.

**Academic Integrity Module (Plagiarism/APA Style).** For this course, you will familiarize yourself with GMU's academic integrity policies. **The instructors and GMU take academic integrity very seriously.** Complete the module as well as the Quiz Questions. You must receive an 80% or better to pass the quiz. Those who pass will receive 20 points towards their grade.

**Reading Guide Submission.** Each week, students will be given a reading guide that corresponds with chapters in Catania and any additional readings assigned. Students are expected to complete the reading guides in their entirety and submit them for grading. Grading will be based upon completion and relevance to the chapter read rather than accuracy of guides.

**Course Record Sheet.** Upon completion of all assignments, students will submit via quiz a record sheet. Students will state specifically three things they learned, have an opportunity to ask questions, and provide feedback on the week's learning activities.

**CyberRat.** CyberRat is a fully interactive digital video presentation of a real laboratory rat to help you perform behavior analysis in a controlled laboratory environment. You will be expected to download CyberRat and perform a set of experiments. You will also prepare and write a report

that mirrors what would be seen in a peer-reviewed journal article. This assignment is broken into milestones across the term. Full instructions are available on the LMS.

Students will also complete two additional CyberRat experiments, upload the results, and complete quiz questions about the assignment.

**Module Quizzes.** The module quizzes are designed to test your knowledge and retention of the materials, and are based upon your readings as well as the videos included in the module. They are fluency-based, so you will have 20 minutes to answer 20 questions. You will get three attempts to pass the module quizzes and the highest grade will be recorded. Question formats will be similar to the pretest and final exam but will not be the same questions. Respondus Lockdown Browser is not required for the Module Quizzes.

**Pretest and Final Exam.** There are two parts to this assignment – the pretest and final exam.

The pretest will be given during the first week of class and is designed to test your prior knowledge of the material. Points are assigned for completion of the assignment, NOT for the score obtained.

The final exam is designed to test your knowledge of vocabulary and basic concepts and philosophy that you were taught this term. The score you receive on the final exam will be factored into your final grade. Both exams will consist of 50 questions, will be timed, and will require Respondus Lockdown Browser. Timed tests and locked screens are used to help simulate the requirements of the BACB certification exam.

## **Course Policies and Expectations**

### **Attendance/Participation**

#### **Technology Use**

The ability to use technology is key to this course. Students are expected to present via video and audio, create and upload documents, complete interactive activities, and navigate the online environment.

### **Assignment Instructions**

Following instructions for formatting papers will expedite grading and feedback for all students. Students are responsible for following these guidelines for grading:

- All final drafts of assignments must be submitted through the LMS, including final drafts of assignments.
- Assignments **must** be completed within the template provided by the instructor. Failure to do so will result in delays in grading.
- Emailed and hard copies of assignments will not be graded unless approved in advance by the instructor, as these methods of submission lead to a high probability of lost student work.
- Detailed information about each assignment is posted on the LMS. Failure to review all documents available often results in low performance.

### Late Work

This class is NOT self-paced. All assignments (e.g., quizzes, activities, assignments, projects) must be submitted via the LMS on or before the due date. In fairness to students who submit work on time, points will be deducted for late submissions (up to 10% per day). Assignments will not be accepted more than 1 week late unless prior arrangements with the instructor have been made. No work will be accepted after the final exam has closed.

### Grading

93-100% = A

90-92% = A-

87-89% = B+

83-86% = B

80-82% = B-

70-79% = C

< 69% = F

Assignments	Points
Introductory Discussion	5
Academic Honesty Assignment	20
Reading Guides	140
Course Record Sheet	42
Module Quizzes	280
Cyber Rat	79
CyberRat Reinforcement Schedules Assignments	78
Pre-Test (completion only)	20
Final Exam	150
<b>Total</b>	<b>814</b>

### Student Evaluations of Teaching:

The student evaluation of teaching, or SET, is an online course survey. You are strongly encouraged to complete this form for each course as this feedback helps instructors and administrators improve your class experiences. Towards the end of the course, you will receive email and LMS notifications when the evaluations open. Your anonymous and confidential feedback is only shared with instructors after final grades have been submitted.

**\*Note:** George Mason University Academic Standards will be strictly enforced *through an institutional sanctioning matrix that all colleges and departments will need to adhere to if they find there are students who are engaged in academic dishonesty.* See [Academic Standards](#) (<http://academicstandards.gmu.edu/>) and [GMU Catalog - Academic](#)

**Standards** (<https://catalog.gmu.edu/policies/academic-standards/>). Students are responsible for reading and understanding the Standards. The Office of Academic Integrity “works to promote authentic scholarship, support the institution’s goal of maintaining high standards of academic excellence, and encourages continued ethical behavior of faculty and students to cultivate an educational community which values integrity and produces graduates who carry this commitment forward into professional practice.” Work submitted must be your own new, original work for this course or with proper citations.

**Professional Dispositions**

Throughout study in the College of Education and Human Development, students are expected to demonstrate behaviors that reflect the positive dispositions of a professional. See [Student Guide](https://cehd.gmu.edu/current-students/cehd-student-guide) (<https://cehd.gmu.edu/current-students/cehd-student-guide>).

**Use of Generative AI**

Generative AI tools should follow the principles of Mason’s Academic Standards. This includes being honest about the use of these tools for submitted work and including citations when using the work of others, whether individual people or Generative AI tools.

**Class Schedule**

\*Note: Faculty reserves the right to alter the schedule as necessary, with notification to students.

Module	Topic	Readings	Assignments
1	Philosophical Underpinnings of Behavior Analysis	<ul style="list-style-type: none"> <li>• Catania, Ch 1</li> <li>• Baer, Wolf and Risley, 1968</li> <li>• Critchfield, 2011</li> </ul>	<ul style="list-style-type: none"> <li>• Introduction Discussion</li> <li>• Academic Integrity Module</li> <li>• Pre-test</li> <li>• CyberRat Milestone 1</li> </ul>
2	What is behavior and what is learning?	<ul style="list-style-type: none"> <li>• Catania, Ch. 4</li> <li>• Schneider and Morris, 1987</li> </ul>	<ul style="list-style-type: none"> <li>• CyberRat Milestone 2</li> </ul>
3	Consequences that Strengthen Responding - Reinforcement	<ul style="list-style-type: none"> <li>• Catania 6</li> <li>• Catania 14</li> </ul>	<ul style="list-style-type: none"> <li>• Ungraded Activity - Schedules of Reinforcement</li> <li>• CyberRat Project - Module 2 Revisions</li> </ul>



			<ul style="list-style-type: none"> <li>• CyberRat Project - Background and Significance</li> </ul>
4	Consequences that Weaken Responding – Punishment and Extinction	<ul style="list-style-type: none"> <li>• Catania 8</li> <li>• Catania 9</li> </ul>	<ul style="list-style-type: none"> <li>• CyberRat Project - Module 3 Revisions</li> <li>• CyberRat Project - Run Experiment</li> </ul>
5	Antecedents - Stimulus Control v. Motivating Operations	<ul style="list-style-type: none"> <li>• Catania 13</li> <li>• Catania 15</li> </ul>	<ul style="list-style-type: none"> <li>• CyberRat Project - Module 4 Revisions</li> <li>• CyberRat Ratio Schedules Assignment (this is in addition to the CyberRat Paper)</li> <li>• CyberRat Project - Prepare to Write Discussion</li> </ul>
6	Verbal Behavior and Rule Governance	<ul style="list-style-type: none"> <li>• Catania 26</li> </ul>	<ul style="list-style-type: none"> <li>• CyberRat Project - Module 5 Revisions</li> <li>• CyberRat Project - Write Your Discussion</li> </ul>
7	Maintaining Behavior, Making Connections, Novel Responding	<ul style="list-style-type: none"> <li>• Catania 17</li> <li>• Truax, 1966</li> </ul>	<ul style="list-style-type: none"> <li>• CyberRat Project -</li> </ul>

			Module 6 Revisions <ul style="list-style-type: none"> <li>• CyberRat Interval Schedules and Extinction Assignment (this is in addition to your CyberRat paper)</li> </ul>
8	Course Wrap-Up and Final Exam	None	<ul style="list-style-type: none"> <li>• Complete any outstanding assignments</li> <li>• EDSE 622 Final Exam</li> </ul>

### CEHD Commitments

The College of Education and Human Development is committed to fostering collaboration and community, promoting justice and equity, and advancing research-informed practice. Students are expected to adhere to, and contribute to, these commitments, the CEHD Mission, and Core Values of George Mason University. More information can be found here: [Culture \(https://cehd.gmu.edu/about/culture/\)](https://cehd.gmu.edu/about/culture/)

### GMU Policies and Resources for Students

#### Policies

- Students must adhere to Mason’s Academic Standards. See [Academic Standards \(https://catalog.gmu.edu/policies/academic-standards/\)](https://catalog.gmu.edu/policies/academic-standards/).
- Students must follow the university policy for Responsible Use of Computing. See [Responsible Use of Computing \(http://universitypolicy.gmu.edu/policies/responsible-use-of-computing/\)](http://universitypolicy.gmu.edu/policies/responsible-use-of-computing/).
- Students are responsible for the content of university communications sent to their Mason email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students solely through their Mason email account.
- Students with disabilities who seek accommodations in a course must be registered with George Mason University Disability Services. Approved accommodations will begin at the time the written letter from Disability Services is received by the instructor. See

[Disability Services \(https://ds.gmu.edu/\)](https://ds.gmu.edu/).

- Students must silence all sound emitting devices during class unless otherwise authorized by the instructor.

### **Campus Resources**

- Support for submission of assignments to VIA should be directed to [viahelp@gmu.edu](mailto:viahelp@gmu.edu) or <https://cehd.gmu.edu/aero/assessments>.
- Questions or concerns regarding use of your LMS should be directed to:
  - o [Blackboard Learn: https://its.gmu.edu/knowledge-base/blackboard-instructional-technology-support-for-students/](https://its.gmu.edu/knowledge-base/blackboard-instructional-technology-support-for-students/)
  - o [Canvas: https://its.gmu.edu/service/canvas/](https://its.gmu.edu/service/canvas/)
- For information about [student support resources](https://ctfe.gmu.edu/teaching/student-support-resources-on-campus) on campus, see: <https://ctfe.gmu.edu/teaching/student-support-resources-on-campus>
- o [TimelyCare: https://caps.gmu.edu/timelycare-services/](https://caps.gmu.edu/timelycare-services/)
- o [Writing Center: https://writingcenter.gmu.edu/](https://writingcenter.gmu.edu/)

### **Notice of mandatory reporting of sexual assault, sexual harassment, interpersonal violence, and stalking:**

As a faculty member, I am designated as a “Non-Confidential Employee,” and must report all disclosures of sexual assault, sexual harassment, interpersonal violence, and stalking to Mason’s Title IX Coordinator per [University Policy 1202](#). If you wish to speak with someone confidentially, please contact one of Mason’s confidential resources, such as the [Student Support and Advocacy Center \(SSAC\)](#) at 703-380-1434 or [Counseling and Psychological Services \(CAPS\)](#) at 703-993-2380. You may also seek assistance or support measures from Mason’s Title IX Coordinator by calling 703-993-8730, or emailing [titleix@gmu.edu](mailto:titleix@gmu.edu).

**For additional information on the College of Education and Human Development, please visit our website [College of Education and Human Development \(http://cehd.gmu.edu/\)](http://cehd.gmu.edu/).**

### **Student and Faculty Names and Pronouns**

Name and pronoun use: If you wish, please share your name and gender pronouns with me and indicate how best to address you in class and via email. I use she/her/hers for myself and you may address me as “Chris Barthold”, “Dr. Barthold” or “Dr. B” in email and verbally. I encourage students to use tools Mason provides to change your name

and pronouns on Mason records, if you so choose: <https://registrar.gmu.edu/updating-chosen-name-pronouns/>

### **Diversity and Inclusion Statement**

The College of Education and Human Development, an intentionally inclusive community, promotes and maintains an equitable and just work and learning environment. We welcome and value individuals and their differences including race, economic/class status, gender expression and identity, sex, sexual orientation, ethnicity, national origin, first language, religion, age, and ability status, among other characteristics.

- We value our diverse student body and desire to increase the diversity of our faculty and staff.
- We commit to supporting students, faculty and staff who have been the victims of bias and discrimination.
- We promote continuous learning and improvement to create an environment that values diverse points of view and life experiences.
- We believe that faculty, staff, and students play a role in creating an environment that engages diverse points of view.
- We believe that by fostering their willingness to hear and learn from a variety of sources and viewpoints, our students will gain competence in communication, critical thinking and global understanding, and become aware of their biases and how they affect their interactions with others and the world.

### **Land Acknowledgement Statement**

Land acknowledgment engages all present in an ongoing indigenous protocol to enact meaningful, reciprocal relationships with ancestors and contemporary tribal nations. As a state university, we have a responsibility to include and support indigenous communities and sovereign tribes in our work.

At the place George Mason University occupies, we give greetings and thanksgivings to these Potomac River life sources, to the Doeg ancestors, who Virginia annihilated in violent campaigns while ripping their lands apart with the brutal system of African American enslavement, to the recognized Virginia tribes who have lovingly stewarded these lands for millennia, including the Rappahannock, Pamunkey, Upper Mattaponi, Chickahominy, Eastern Chickahominy, Nansemond, Monacan, Mattaponi, Patowomeck, and Nottaway, past, present, and future, and to the Piscataway tribes, who have lived on both sides of the river from time immemorial.

## **Appendix**

### **Assessment Rubric(s)**

#### **CyberRat**

There are two goals of the CyberRat assignment - the first is to familiarize yourself with basic research done in an operant chamber. The second is to have you compare and contrast how your rat behaves when different schedules are in effect. Remember that this is not a methods course, so there isn't a "best schedule." This is more about seeing how different reinforcement

schedules and environments can affect behavior - and how they are tested in a controlled environment.

Having these experiences helps build fluency in basic concepts and phenomena we see in our everyday life. Being fluent in the basics will help you choose better interventions - because you will be able to interpret what is going on with more precision.

*Milestone 1 Rubric*

Element	Points			
<i>Writing Preparation for Background and Significance</i>	0	1-3	4-9	10
	Missing	Majority of elements are missing and/or article is not from JEAB	1-2 minor elements are missing  Article is from JEAB only	All elements are complete and article is from JEAB Only
<i>Self-Reflection</i>	0	.5	1	2
	Missing	Grades self using rubric  Justifications are missing	Grades self using rubric  Justifications are short and incomplete	Graded self using rubric Justified grade and provided reflection Sets goals for growth

*Milestone 2 Rubric*

Written Background and Significance	0	1-3	4-8	9-10
	Missing	Shaping is not defined in student's own words  Article and Catania are somewhat described, but incomplete  More than 1 error of mentalism and/or explanatory fictions	Shaping is defined in student's own words  Article and Catania are described, but not compared or contrasted  1 error of mentalism and/or explanatory fictions	Shaping is defined in student's own words  Article and Catania are compared and contrasted  No quotes were used  Ended with a summary of the experiment  Avoids mentalism and explanatory fictions

<i>Mechanics</i>	0	1-2	3-4	5
	Unprofessional writing style, Multiple errors in	Another citation style is used Informal writing style	APA 7 <sup>th</sup> edition has 1-2 errors	APA 7 <sup>th</sup> edition styles is used

	grammar and spelling No citations or bibliography	Major errors in grammar and spelling No in-text citations	In-text citations and bibliography are both included Formal and professional writing style 1-2 errors in grammar or spelling	In-text citations and bibliography are both used Formal and professional Writing style No errors in grammar or spelling
<i>Self-Reflection</i>	<i>0</i>	<i>.5</i>	<i>1</i>	<i>2</i>
	Missing	Grades self using rubric  Justifications are missing	Grades self using rubric  Justifications are short and incomplete	Graded self using rubric  Justified grade and provided reflection  Sets goals for growth

*Milestone 3*

<i>Shaping Experiment</i>	<i>0</i>	<i>1</i>	<i>2-4</i>	<i>5</i>
	Missing	Experiment has more than 3 errors and/or graph is missing	Experiment has 1-2 errors  Graph of lever presses is inserted into document	Experiment was run correctly within two tries  Graph of lever presses is inserted into document
<i>Results</i>	<i>0</i>	<i>1-3</i>	<i>4-8</i>	<i>9-10</i>
	Missing	Provides reflection or analysis on the process  More than 1 error and/or explanatory fiction Additional behaviors are missing entirely	Outcome of the experiment is described and is not a reflection on the process  Does not analyze or synthesize any information Additional behaviors may be described but frequencies are not provided  1 error in mentalism or explanatory fictions	Outcome of the experiment is described  Is not a reflection on the process  Does not analyze and synthesize any information Additional behaviors are described and frequencies are provided

				Avoids mentalism and explanatory fictions
<i>Self-Reflection</i>	<i>0</i>	<i>.5</i>	<i>1</i>	<i>2</i>
	Missing	Grades self using rubric Justifications are missing	Grades self using rubric Justifications are short and incomplete	Graded self using rubric Justified grade and provided reflection Sets goals for growth

*Milestone 4*

<i>Preparation for writing Discussion Complete</i>	<i>0</i>	<i>1</i>	<i>2-3</i>	<i>4</i>
	Missing	Major gaps in information	1-2 minor elements are missing	All elements of writing prep are completed and in student's own words
<i>Self-Reflection</i>	<i>0</i>	<i>.5</i>	<i>1</i>	<i>2</i>
	Missing	Grades self using rubric Justifications are missing	Grades self using rubric Justifications are short and incomplete	Graded self using rubric Justified grade and provided reflection Sets goals for growth

*Milestone 5*

<i>Discussion</i>	<i>0</i>	<i>1-3</i>	<i>4-8</i>	<i>9-10</i>
	Missing	Missing comparisons to article or Catania Any element is cut and pasted from the Background and Significance Reads like a reflection not a discussion Examples are clinical in nature	Article, Catania and findings are compared and contrasted Identifying variables are identified, but might be stretch Reflection on the process is provided Examples may be clinical in nature	Article, Catania and findings are compared and contrasted Identifies possible confounding variables Does not provide a reflection on the process

		2 or more errors in mentalism or explanatory fictions	1 error in mentalism or explanatory fiction	Examples are not clinical in nature  Avoids mentalism and explanatory fictions
<i>Mechanics</i>	<i>0</i>	<i>1-2</i>	<i>3-4</i>	<i>5</i>
	Unprofessional writing style, Multiple errors in grammar and spelling  No citations or bibliography	Another citation style is used  Informal writing style  Major errors in grammar and spelling  No in-text citations  Sources are listed in the bibliography but may have formatting errors	APA 7 <sup>th</sup> edition has 1-2 errors  In-text citations and bibliography are both included  Formal and professional writing style  1-2 errors in grammar or spelling  Sources are listed in the bibliography but some formatting errors	APA 7 <sup>th</sup> edition styles is used  In-text citations and bibliography are both used  Formal and professional Writing style  No errors in grammar or spelling  Sources are also listed in the bibliography
<i>Self-Reflection</i>	<i>0</i>	<i>.5</i>	<i>1</i>	<i>2</i>
	Missing	Grades self using rubric  Justifications are missing	Grades self using rubric  Justifications are short and incomplete	Graded self using rubric  Justified grade and provided reflection  Sets goals for growth