2017-2018 Writing Development Initiative Reflection

Biological Psychology

Brett Beston

University of Toronto
What did I do?

Over the past three years, I have worked with the Robert Gillespie Academic Skills Centre (RGASC) to create a Writing Development Initiative (WDI) within Psychology’s ‘Introduction to Physiological Psychology’ (PSY290) course. The goal of this writing project is to provide students structured writing experiences that develop critical reading and scientific literacy skills, such as; Scientific search skills, implementation of discipline-specific writing style (APA), and a structured experience in critically evaluating scientific claims.

My approach is to provide students with ‘simplified’ critique experiences by comparing neuroscience related claims made in popular media outlets (e.g., Huffington Post) to the primary research source. Examples of such media headlines are “How to Prevent Stress from Shrinking Your Brain” (Greenberg, 2012), or “How Exercise Boosts Your Brain Power” (Asp, n.d). The nature of these headlines is intended to be ‘catchy’ and immediately connect with readers. The writing activities were carried out using over two assignments to allow students to create clear and concise goals for each assignment and to provide formative feedback that students could learn from and apply to the second assignment. The two stages are as follows:

**Stage 1** – “Convincing you with science: The powerful persuasion of science in the media”

The goal of this exercise is to help students develop a sense of how ‘science’ is used to leverage claims about what we commonly accept as ‘facts,’ and to identify what research is being used by engaging in scientific search strategies. Students were asked to read one of two selected media articles (topics listed above) and write a summary of the central premise of the article (<500 words) and identify four pieces of scientific evidence that were presented and how the author used these points to support their claim.

**Stage 2** – “A critical review of the science behind the media”

Stage two was a critical/analytic assignment to compare and contrast a peer-reviewed journal article that directly addresses the media report presented in Stage 1. In their analysis, students were asked to identify the central research questions of the scientific article, how the experiment was performed, what was found, and what conclusion(s) the authors were able to make. In the critical contrast section, students reflected upon the claim of the media article (from Stage 1) in light of their analysis of the research findings. This assignment was intended to be between 1000-1250 words.

Specific assignment instructions and evaluation criteria are provided at the end of this report (See Appendix).

To support **student skill development**, students received;

1. 1 hour of in-class instruction per assignment (2 hours per term):
   **Stage 1**: I walked students through an example of a popular media article to highlight how authors commonly present scientific research. I described how to conduct a scientific search to identify the sources of research presented in the media article. I reviewed concepts of APA formatting and highlighted assignment expectations for their written submission.

   **Stage 2**: Reviewing a research article and understanding what researcher are ‘saying’ can be a major challenge for many students who are engaging in this process for the first time. I felt it was important to guide students early in this process to highlight what kind of information they should pay attention to in each section (introduction, methods, results, and conclusions) of the research paper. I also discussed with students how I wanted them to focus on the media claim (e.g. ‘stress...
is shrinking your brain’) and highlight to what extent is this claim actually supported by the research they have just read.

2. Student received WDI supported TA office hours (6 hours per term).
3. Instructor led office hours (4 hours per term).
4. Access to regular RGASC writing support services.

To support our TA involvement in this writing initiative, 2 teaching assistants each term received;

1. Intensive RGASC led Writing TA Training Program to support learning best practices of writing assessment to provide TA's with the skills necessary to assess student communication, demonstration of knowledge, and effective writing skills. 2 hours of dedicated TA training/benchmarking for both assignments.
2. Dedicated grading time for two assignments (~115 hours per term).

This WDI initiative was carried out over both the fall 2017 and winter 2018 terms. There were no changes to the assignments instructions or timing of assignment due dates between the fall and winter session. As such, I have combined feedback from both terms together in my reflective assessment. In previous years, I have relied on student opinion surveys of the perceived ‘value’ of this writing initiative, their sense of "writerly efficacy," and TA reports of common areas of improvement. I have learned that the assignments are (generally) positively perceived by students and they see the benefit of these learning experiences in their academic development. With the support of the RGASC data collection, my reflections this year will include objective analysis of student writing samples, and personal testimony from the perspective of my teaching assistants. Both forms of data have helped me to shift my evaluative perspective on how I should modify the next iteration of this WDI in the 2018-2019 academic year.

How did it work?
To objectively evaluate changes in the quality of student writing submission, the RGASC analytically reviewed Stage 1 and Stage 2 submissions of 39 students across the fall 2017 (n = 15) and winter 2018 semester (n=24).

The RGASC reviewer identified and evaluated four aspects of student's (1) Writing (paragraph construction and structure) (2) Critical Use of Sources (use of quotations, connections to sources, and critical assessment of sources). In RGASC analysis of writing samples it was noted that student construction of topical sentences, paragraphs, structure and writing flow noticeably improved from Stage 1 to Stage 2 assignments. The overall sentiment is supported by explicit examples of changes between stage 1 and 2, For instance, consider the following paragraphs written by the same student in Stage 1 and Stage 2 of the writing assignment:

Stage 1

“The effect of decreasing mental activity promotes grey matter supports focus, and the state of relaxing decreasing stress. Through reduction of the mental load in the brain, there is long term aid in focus when one is not meditating; constant practice of meditation reduces the resources of distractions, increasing the ability to be attentive (Maclean, et al. 2016). Constant practice of meditation strengthens the brain also benefitting memory skills. The brain is able to clear out distractions through the adjustment of alpha waves allowing one to gain and remember information (Kerr, et al., 2011). This increases the state of being productive. Furthermore, the greater amount of grey matter existing in the hippocampus and the frontal lobes of the brain has positive
effects on focus and emotional stability (Pagononi, & Cekic, 2007). Growth of grey matter counteracts the effects of cognitive decline in the brain due to the increase of neurons over time (Luders, Toga, Lepore, & Gaser, 2009). Meditation has proved to further benefit de-stressing when compared to other methods: exercise and no formal stress-relief activity, conducted on health resource managers; participants who were given meditative training had shown “enhanced emotion regulation” when compared to other groups (Levy, Wobbrock, Kaszniak, & Ostergren, 2012). The purpose of clearing one’s mind shows to have positive aspects in life through taking time to meditate. "

Stage 2

“Desbordes et al. (2012) paid particular attention to the amygdala: it controlled emotional and attentional activities encode stimuli that can provoke responses such as safety, appraisal and responses to significant events (Baxter and Murray, 2002; Phan et al., 2002; Sander et al., 2003; Zald, 2003; Haas and Canli, 2008; Sergerie et al., 2008). A damaged amygdala has negative consequences resulting in potential depression, anxiety, and post-traumatic stress disorder (Davidson, 1998; Davidson and Irwin, 1999; Lapate et al., 2012). Studies show that meditation aids in reducing negative factors as Desbordes and colleagues (2012) focuses on the amygdala.”

The sample provided in Stage 1 lacks any development of context. The paragraph begins with a confusing statement of grey matter and mental activity that does not make a meaningful attempt to demonstrate knowledge or to connect with the reader. However, in the Stage 2 sample, I can see a marked improvement in the student’s attempt to contextualize why researchers studied the amygdala and the implication of changes in the function of the amygdala to behaviour/wellbeing. The RGASC reviewers also noted improvements in Student’s Critical Use of Sources. It was also pointed out that students relied more upon direct quotes, and made little attempt to provide relevant details to support the validity of statements in their submissions. For example:

Stage 1 Critical assessment of media article:

“Asp concludes her article by highlighting the amount of cardiovascular exercise necessary to see results and five additional advantages to exercise.”

Stage 2 Critical assessment of media article:

“Firstly, Asp (n.d.) seems to underemphasize the intensity of the exercise completed in the study. Joyce et al. (2009) have participants cycling for 30 minutes at 40% of their maximum output, but describing this exercise as easy is not at all descriptive and a very relative term to the fitness level of each individual.”

This comparison highlights that this student is adding factual specificity to their writing to demonstrate a better understanding of the information presenting as well as evidence of critical evaluation of how the author (Asp) is presenting this information.

Quantitatively, components of the Writing Critical use of Sources were and. Each component was evaluated on a 4 point scale (1 = Very Inadequate or Missing, 2= Inadequate, 3 = Adequate, 4 = Excellent, see tables 1 and 2 below). The table presents the mean evaluation of each component for Stage 1 and 2 writing samples to show an improvement in each category of evaluation for Writing and Critical Use of Sources. To evaluated the statistical significance of these differences, I used a dependent measure t-test statistically evaluate systematic differences in student evaluations to reveal that there was a statistically significant (p < 0.01) improvement across all categories of analysis. In my reflection of this analysis, I am
pleased to see improvements in elements of writing elements and add confidence to my perception that experience in my Psy290 writing activities is contributing to the development of writing efficacy. I am less surprised by the difference that exists in the Critical Use of Sources, as Stage 1 of the assignment asks students to summarize and identify scientific information, but does not ask students a critical assessment of this information.

Table 1: RGASC analysis of Writing

<table>
<thead>
<tr>
<th></th>
<th>Average Stage 1</th>
<th>Average Stage 2</th>
<th>Statistical Improvement?</th>
<th>T-value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paragraphs include clear</td>
<td>1.65</td>
<td>2.95</td>
<td>Yes</td>
<td>8.5</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>topic sentences that</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>introduce the paragraph’s</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>argument.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The paragraph's sentences</td>
<td>2.40</td>
<td>3.04</td>
<td>Yes</td>
<td>9.7</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>are coherently arranged,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>with adequate use of</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>transition words and</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>signposting to guide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the reader.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sentences are structured</td>
<td>2.90</td>
<td>3.10</td>
<td>Yes</td>
<td>2.65</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>clearly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The writing is appropriately</td>
<td>2.96</td>
<td>3.76</td>
<td>Yes</td>
<td>12.13</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>academic in register.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2: RGASC analysis of Critical Use of Sources

<table>
<thead>
<tr>
<th></th>
<th>Average Stage 1</th>
<th>Average Stage 2</th>
<th>Statistical Improvement?</th>
<th>T-value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Critical Use of Sources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The claim made in the source</td>
<td>2.45</td>
<td>3.28</td>
<td>Yes</td>
<td>7.06</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>document is clearly identified.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The evidence drawn upon</td>
<td>2.94</td>
<td>3.37</td>
<td>Yes</td>
<td>4.1</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>to support the claim is</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>clearly identified.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical assessment of the</td>
<td>1.73</td>
<td>3.15</td>
<td>Yes</td>
<td>16.67</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>evidence is present (method,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sample size, relevance,</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>date, focus, etc.).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical assessment of the</td>
<td>1.54</td>
<td>2.94</td>
<td>Yes</td>
<td>11.86</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>evidence’s ability to support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>the claim is present.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In previous iterations of the Psy290 WDI, I have relied upon surveys to capture an understanding of student’s perception of the effectiveness of the writing assignments. This year, I am shifting focus to consider feedback that was received by one of our WDI Teaching Assistants, Joelle Zimmerman. In her reflection of the assignments, Joelle does sense that students are improving over the course of the two stages (consistent with RGASC evaluations). Joelle also notes two significant concerns with the feedback process of the assignment. Joelle notes that it was challenging to provide feedback to students in the allotted amount of time, and furthermore, it was not apparent that students understood the feedback as she noted that some students did not appear to be integrating the feedback into Stage 2. In my own experience, I can agree that this is the most challenging aspect of writing assignments.

What have I learned? What would I change?

In reflecting upon this year’s WDI, I have appreciated the ability to review the RGASC analysis of writing samples. It helps to affirm the goals of my WDI to support the development of critical reading and writing skills. I have also learned that providing useful “feed-forward” comments is not only very challenging for TA’s but in many cases, appears to be just as challenging for students to incorporate into future assignments.

With the support of the WDI initiative, I want to continue running this project, with two significant modifications. First, I want to explicitly develop the feedback process for both TA’s and students. In particular, I will be connecting with Mairi Cowan (UTM Writing Fellow) to develop more effective feedback strategies for TA’s. Secondly, I believe that student must be given an opportunity to act on feedback, not by merely integrating information into future assignments, but by allowing students to revise and resubmit their first assignment. I believe these changes will help improve the quality of student writing and their experience in this writing initiative.


Appendix: Assignment Instructions

Assignment 1

Convincing you with Science: The powerful Persuasion of science in the media

We are presented with ideas or arguments ‘all-the-time’ by friends, teachers, textbooks, and of course…, the media. These sources are trying to convince you of something, and it’s up to you to decide if you agree with it (or not)!

We are going to dive into some neuroscience related media articles: These topics provide ‘accessible’ and interesting entry points to each topic.

The goal of this assignment is to explore common interpretations of neuroscience research. As a part of critical reading, It is important for you to summarize what an argument is ‘saying’ and how they are presenting evidence to support these claims. There are also broader goals of this assignment that are also transferable to other course contexts, including:

- writing a summary of evidence used to support the main premises of an argument.
- your ability to identify research and the original sources of information.
- Use of APA formatting (this will be essential in 3rd year PSY courses!).

I encourage you to seek writing support during writing drop-in session at the Robert Gillespie Academic Skills Centre. Our writing experts can support how you structure ideas, communicate clearly, and present knowledge in an effective way. For specific availability throughout the week, please visit:

http://www.utm.utoronto.ca/asc/11-online-and-drop-appointments
Start by choosing one of the following articles:
Choose one of the following media articles (see selections below) related to neuroscience research.

**How Meditation Affects our Brains**
https://blog.bufferapp.com/how-meditation-affects-your-brain

-or-

**How Exercise Boosts Your Brainpower**
http://www.active.com/fitness/articles/how-exercise-boosts-your-brainpower

**Part I - Article Summary**
Write a brief summary of the article (should be around 1 page) that:
- States the main premise of the article.
- Summarizes / Highlights 4 pieces of evidence (i.e., research studies) that are being used to support the main premise (e.g. stress is shrinking your brain or exercise is boosting your brain power).

**Part II - Literature Search**
Seek out the ‘original’ sources of information for the 4 pieces of evidence that you described above. That means that you need to do some detective work to narrow in on what the paper might by Looking at clues within the text to provide you with information such as; author names, research institution, journal title, who / what was studies, research results, or any other fact that might lead you to the originally published research.

For each piece of evidence, I want you to:
1. Copy and paste the original text from the media assignment into your assignment (use quotes and cite the author of the work in each instance).
2. Identify the original source of information
3. Provide a statement of justification to indicate what ‘clues’ you used from the media passage to help your search and how they match to the original source of information.
4. Provide a properly formatted APA bibliographic citation for the original article. We’ll talk about this in class over the next couple of weeks following these guidelines:
   Basic rules: https://owl.english.purdue.edu/owl/resource/560/05/
   Journal citation examples: https://owl.english.purdue.edu/owl/resource/560/06/
5. Go back to your Article Summary (Part 1) and add in the appropriate in-text citation to that piece of evidence using the following rules:
   in-text citations: https://owl.english.purdue.edu/owl/resource/560/06/

Repeat this process for all 4 pieces of evidence that you have identified. This section does not need to be written using formal paragraph structure, but do try to communicate your statement of justification using complete sentences.
Formatting your assignment using APA style guidelines:

Using APA formatting will be expected in your level 3 and 4 psychology courses. I would like you to adopt the following APA guidelines for this assignment, and you will be assessed on your ability to do so. You will only be assessed on the following:

- **Font:** 12-point, Times (or similar), double spaced
- **Remember:** Always be **precise, and goal oriented** in your writing.

- **Provide an APA formatted title page.** Use the instructions for creating your title page from the following link: https://owl.english.purdue.edu/owl/resource/560/01/. Please see the written and visual descriptions provided.

- **Include a page header and page number** (also known as the "running head") at the top of every page. See: https://owl.english.purdue.edu/owl/resource/560/01/
  - Insert page numbers **flush right at top of page (all pages).**
  - Type ‘an abbreviated title of your paper’ in the header **flush left** (all pages). The running head is a shortened version of your paper's title and cannot exceed 50 characters including spacing and punctuation.

- **In-text citations and reference list.**
  - Use the following instructions to help guide your creation of in-text citations (https://owl.english.purdue.edu/owl/resource/560/02/)
  - Use the following instructions to create your reference list:
    - Basic Rules: https://owl.english.purdue.edu/owl/resource/560/05/
    - single / multiple authors: https://owl.english.purdue.edu/owl/resource/560/06/
    - Journal Article: https://owl.english.purdue.edu/owl/resource/560/07/
    - On-line ‘Non-periodical’ report: https://owl.english.purdue.edu/owl/resource/560/10/

Submitting your paper:
Please read carefully as this will help ease the grading process and reduce confusions.

- **Name Your files:**
  - PLEASE name files using the first 3 letters of your last name and the last 3 digits of your student ID. For example, if I were to hand in an assignment, I would name my assignment "Bes233" as Beston is my last name and 233 is the last 3 digits of my undergrad student ID! I don't mind if you add anything after that, like "Bes233 Assignment1.pdf."

  - Following this procedure will streamline the process of grading your papers.

- **Where / When to submit Your files:**
  *OPTIONAL SUBMISSION* - You can earn Course Engagement Credit (CEC, 2%) by peer reviewing the work of 2 other students. To participate in this process, you MUST upload a copy of your work to PeerScholar (link found in assignment folder) **by MONDAY SEPTEMBER 25th at 9am.** You will then be assigned to review two other pieces of work and you will be given until Tuesday at 5pm to complete your reviews.
*MANDATORY SUBMISSION* - Your assignment should be uploaded to PORTAL. This process works in conjunction with Turnitin.com and makes the process of submitting assignments a little easier. Due: MONDAY SEPTEMBER 25th at 9am

**How you will be assessed.**

**Assignment be assessed on the following criteria:**

1. How well key research is **identified** in the media article.
2. A demonstration of **understanding** the content / evidence presented.
3. How evidence **contributes** to the main premise presented in the article.
4. Clear expression of **ideas, including vocabulary, terminology and conventions**
5. Appropriate use of **APA formatting** throughout.

Items will be assessed using an 8 point scale of your ability to demonstrate these elements.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>0</th>
<th>4</th>
<th>6</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>How well key research is <strong>identified</strong> in the media article.</td>
<td>Fails to identify</td>
<td>2</td>
<td>3</td>
<td>4 original sources</td>
</tr>
<tr>
<td></td>
<td>original sources.</td>
<td></td>
<td></td>
<td>correctly identified.</td>
</tr>
<tr>
<td></td>
<td>Main premise</td>
<td></td>
<td></td>
<td>Correctly identified.</td>
</tr>
<tr>
<td></td>
<td>present. Supporting pieces of evidence present (may or may not be 4). Lacking understanding of how evidence supports premise.</td>
<td></td>
<td></td>
<td>Clearly demonstrates an understanding of main premise and how 4 related pieces of evidence support main premise.</td>
</tr>
<tr>
<td>Presentation of media premise and how it is supported by evidence provided.</td>
<td>Fails to identify main premise or present any evidence related to topic.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Poor demonstration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>of content / evidence presented in one or more aspects of evidence presented.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Good demonstration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>of content / evidence presented. May exclude relevant details, or include less relevant details.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Excellent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>demonstration of content / evidence.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>demonstration of understanding content / evidence presented.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Significant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>difficulties present that limits reader’s comprehension.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Further revisions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>would improve the expression of ideas and improve readability.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Minor error in one or more areas, but limited impact on readability. Minor corrections could be recommended.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Well written and clearly expressed.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clear expression of <strong>ideas, including vocabulary, terminology and conventions</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fails to use APA formatting.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inconsistent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>application of APA guidelines.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Some minor errors in APA formatting.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Good use of APA formatting throughout.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>APA formatting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Page 10 of 13
Assignment 2
A critical review of the science behind the media
Due: March 19th at 9am.

Objectives
In this assignment, you will build upon select one of the media articles that were used in the ‘Neuroscience and the Media’ (Assignment 1) and discover whether or not that headline is supported by findings presented in published research.

In this assignment, you will develop:
1. Your ability to read and understand scientific literature.
2. A sense of how you convey research findings from a paper.
3. Your ability to use evidence to draw a critical (either positively, or negatively) comparison between two sources of information.

Instructions
Choose from one of the following two articles that were previously sourced from the media articles in Assignment 1. You may select from the same, or different topic that what you wrote in assignment 1.

Used in: How Meditation Affects our Brains

Used in: How Exercise Boosts Your Brain Power

Expectations of your paper.
Part I (~1 paragraph)
In the first part of the assignment, briefly introduce the media claim and identify which source of scientific literature that you will be working with.

Part II (roughly 2-3 pages)
Briefly summarize the primary research article that you selected– Do not use direct quotations. What we are looking for (and what you’ll be marked on) is how well you seem to understand what each article is saying.
- What were the researchers investigating?
- Were there any hypotheses/predictions (If no hypothesis/prediction is clearly stated – what, in your opinion, is the research question?)
- Describe the methodological approach used?
  - Were they interested assessing changes in the brain
  - Were they focused on a particular brain area? If so, why?
  - What tools/approaches did they use e.g, fMRI, EEG, electrophysiology, etc.)
- What were they trying to measure?
- Who were they comparing results between?
- hese are the kinds of things that I’d like to see you addressing in the methodological approaches section!

- What was **found**? Be descriptive and demonstrate an understanding of key results identified in the paper and the implication of these findings.
- What **conclusions** were made?

**Part III (~1 page)**
Critically evaluate the media claim in the context of the scientific article that you have just summarized.

- Does this research support the claim made in the media article?
- What are the key pieces of evidence that do, or do not support it?
- If the evidence doesn't support the claim, is there another experiment that might be conducted to validate this claim? ...and in that same breath, has any other research been done on this area that might support the claim (or refute it?).

**Writing support**
All are encouraged to seek writing support at the Robert Gillespie Academic Skills Centre during writing drop-in sessions. Our writing experts can support how you structure ideas, communicate clearly, and present knowledge effectively.

*General drop-in hours* throughout the week, please visit: [https://www.utm.utoronto.ca/asc/drop-in-appointments](https://www.utm.utoronto.ca/asc/drop-in-appointments).

**Formatting Instructions**

- **Format assignment using APA style:**
  - 5 pages maximum
  - Font: **12-point**, Times (or similar), double spaced
  - Remember: Always be precise, and goal oriented in your writing.
  - **Include a title page.** Use the instructions for creating your title page from the following link: [https://owl.english.purdue.edu/owl/resource/560/01/](https://owl.english.purdue.edu/owl/resource/560/01/). Please see the written and visual descriptions provided.
  - Include a **page header and page number** (also known as the "running head") at the top of every page. [https://owl.english.purdue.edu/owl/resource/560/01/](https://owl.english.purdue.edu/owl/resource/560/01/)
    - Insert page numbers **flush right at top of page (all pages).**
  - **In-text citations and reference list.**
    - Use the following instructions to help guide your creation of in-text citations ([https://owl.english.purdue.edu/owl/resource/560/02/](https://owl.english.purdue.edu/owl/resource/560/02/)).
    - Use the following instructions to create your **reference list:**
      - Basic Rules: [https://owl.english.purdue.edu/owl/resource/560/05/](https://owl.english.purdue.edu/owl/resource/560/05/)
      - single / multiple authors: [https://owl.english.purdue.edu/owl/resource/560/06/](https://owl.english.purdue.edu/owl/resource/560/06/)
      - Journal Article: [https://owl.english.purdue.edu/owl/resource/560/07/](https://owl.english.purdue.edu/owl/resource/560/07/)
      - On-line ‘Non-periodical’ report: [https://owl.english.purdue.edu/owl/resource/560/10/](https://owl.english.purdue.edu/owl/resource/560/10/)
Submission Instructions

Please read carefully as this will help ease the grading process and reduce confusions.

- **Due:** NOVEMBER 20th at 9am.
- **Name** Your files:
  - PLEASE name files using the first 3 letters of your last name and the last 3 digits of your student ID. For example, if I were to hand in an assignment, I would name my assignment "Bes233" as Beston is my last name and 233 is the last 3 digits of my undergrad student ID! I don't mind if you add anything after that, like "Bes233 Assignment1.pdf.
- **Where to submit** Your files:
  - *MANDATORY SUBMISSION* - Your assignment should be uploaded to PORTAL. This process works in conjunction with Turnitin.com and makes the process of submitting assignments a little easier.
  - *OPTIONAL SUBMISSION* - You can earn Course Engagement Credit (CEC, 2%) by peer reviewing the work of two other students BEFORE THE DUE DATE. To participate in this process, you MUST upload a copy of your work to PeerScholar (link found in assignment folder) by **Monday, November 13th at 9am**. You will then be assigned to review two other pieces of work and you will be given until until **Wednesday the 15th at 11:59pm** to complete your reviews. Only students that have completed both peer reviews will receive credit.

Assessment

Assignment be assessed on the following criteria:
*(Items will be assessed using an 8 point scale of your ability to demonstrate these elements.)*

Part I – The Introduction:
1. How well is the media claim introduced and linked to the primary research article?

Part II – Summary of Research Article
2. Does the student introduce the rationale and hypothesis of the main research article?
3. Is there a clear explanation of how the research was conducted.
4. Does the student accurately convey the main research findings.

Part III – Critical Evaluation of Media Claim
5. Does the student compare the media statement in light of the research article findings. Comment.
6. Does the student demonstrate a meaningful attempt to reflect / evaluate the claims in the media article.

Style
7. Clear communication and organization of written work.
8. Evidence of effective integration and use of source material.

Do NOT exceed the page limit. Our Teaching Assistants will be instructed to stop reading beyond the page limit and to provide a comment that they have done so.