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Building Information Literacy Through Consideration of Claims in Psychology: Evaluating Credibility and Evidence in Sources

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PSYCHOLOGICAL MYTHS, MISTRUTHS AND MISCONCEPTIONS

Curriculum-Based Strategies for Knowledge Change



Edited By: Karla Lassonde and Melissa Birkett

CHAPTER 9. BUILDING INFORMATION LITERACY THROUGH CONSIDERATION OF CLAIMS IN PSYCHOLOGY: EVALUATING CREDIBILITY AND EVIDENCE IN SOURCES

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ABSTRACT

This chapter describes the design, execution, and initial assessment of a series of assignments meant to build information literacy in students in an Introductory Psychology course. Students rated popular psychology claims as true or false. They then evaluated the science regarding “The Mozart Effect,” in a group-led discussion. They then chose a popular claim to study, found relevant sources, evaluated them, and wrote an evidence-based summary of whether to accept or reject the claim. Our assessment indicated that students improved their ability to 1) find relevant primary sources, 2) discern sources as evidence-based and credible, and 3) use evidence to construct a written argument. This multi-part assignment emphasized the process of research over the final product while improving scientific and information literacy.

INTRODUCTION

Information literacy requires that we be reflective in our search for information and that we seek to understand how information is produced, valued, and translated into knowledge. Information literacy is a key skill for undergraduate psychology students (American Psychological Association (APA), 2013). This disciplinary emphasis aligns with documents from the American Library Association (ALA) and the Association of College and Research Libraries (ACRL) that define information literacy, describe its value in the undergraduate psychology major, and provide examples of best practices and recommendations for integration (ALA, 2006; ACRL, 2015). This overlap suggests that efforts of faculty and librarians to collaborate on shared educational goals through the development of instruction and specific assignments will likely result in improved information literacy among students (Detlor et al., 2012; Julien & Pecoskie, 2009; Lindstrom & Shonrock, 2006).

Evaluation of information and evidence within a source is an important information literacy skill that requires deep engagement with scholarly research. Many first-year students report struggling with reading, understanding, and incorporating scholarly sources into their work, especially if their previous educational experiences did not require them to find, read, and use empirical papers (Head, 2013). This challenge may create roadblocks to successful writing of a research paper, a common assignment in introductory courses. Creating alternative assignments that de-emphasize a polished research paper in favor of a formative learning experience where student and instructor can reflect on research may provide a more supportive and productive learning environment. Using psychological myths and pop-psychology claims in evaluation-based assignments can engage students in course content while promoting information literacy skills and mindsets. Using myths in such assignments acknowledges that students have prior knowledge and experiences and encourages evaluation and extension of that knowledge through scholarly research in psychology. These myths can also allow for deep exploration of varied psychology content areas - development, social influences on behavior, abnormal psychology, and more.

The series of assignments described in these chapters supports a number of skills related to the APA Guidelines for the Undergraduate Psychology Major (APA, 2013). These assignments are most closely aligned with Goal 2: Scientific Inquiry and Critical Thinking. By evaluating research claims and studies, students sharpen their skills related to psychology information literacy (2.2) and are introduced to models of how researchers use scientific reasoning to interpret psychological phenomena (2.1). Class discussion and individual reflection on how psychology research is represented in popular media and how that may have influenced their initial evaluation of their claims introduces students to sociocultural factors that influence scientific inquiry (2.5). These assignments also support skills related to Goal 1: Knowledge Base and Goal 4: Communication. Specifically, students are applying and expanding upon the concepts, principles, and themes of psychology that they had been introduced to throughout the semester (1.1) as well as practicing different forms of writing in support of research-based inquiry and reflection (4.1).

This chapter presents a multi-step research assignment designed via collaboration between a faculty member in psychology and an instructional librarian for an Introductory Psychology course (PSY101). Students selected a popular claim related to psychology, shared their initial impressions of how true it was and identified reasons for those impressions, found and evaluated peer-reviewed primary sources related to the claim, and reassessed their own understanding of the claim via a final evidence-based paper. This assignment used formative assessment to promote progressive skill development and allowed for student reflection on progress and differentiated instruction and support from faculty. Instructors also emphasized how information relevant to psychology is created and shared, with a particular focus on oversimplification or misrepresentation of research in popular media.

FOUNDATION AND COLLABORATION

Psychology faculty at Westminster College were revising their curriculum to more deliberately include research across all four years of the major, with emphasis on the first year. This work was part of a National Science Foundation-sponsored initiative organized by the Council for Undergraduate Research to integrate and scaffold research in STEM curricula (see "Acknowledgements"). The revisions to PSY101, a foundational course in the psychology major but also a support course for many other students, included a more explicit focus on psychology as an evidence-based science, the development of scientific and information literacy skills, and written communication of evidence-based information. Such revisions were consistent with disciplinary proposals to revise the introductory course (Gurung et al., 2016). PSY101 has traditionally been a content-heavy course; the degree of focus on evidence-based psychology and relevant research skills in this course is unclear (Griggs et al., 2013). Accordingly, the revisions to PSY101 connected course content to the development of information literacy and written communication skills, with a focus on the research process. These changes were intended to allow students of any major to develop their ability to think critically about scientific information, evaluate sources based on form, process, and evidence, and communicate research findings in written form.

In conceptualizing a final assignment for this revised course, the psychology professor consulted with a librarian to brainstorm ideas for engaging research assignments. Both professor and librarian wished to use a process-based assignment rather than one that emphasized a single final product, which led to the development of a four-part assignment, starting with an in-class activity completed on the first day of class. Critical reflection on the differences between varied sources of information, along with understanding and evaluation of primary research, emerged as themes in discussing shared student learning goals.

An assignment focused on myths and claims in popular psychology was a natural fit for developing skills of critical evaluation and an understanding of the role of research in shaping what we know. Additionally, this approach allowed student research to more explicitly start from a place of reflection on prior understanding and experiences. Many traditional research paper assignments ask students to generate their own topic or question; students may spend considerable time choosing a topic and figuring out how to “research,” which can limit the development of more sophisticated skills. Instead, these assignments explicitly focused on the evaluation of sources and evidence; this evaluative process was initiated together as a class. Compared to traditional research paper assignments, these assignments placed less emphasis on the final product of research and provided students with a choice of claims rather than asking them to develop their own topic. Accordingly, more time can be spent encouraging students to deeply engage with and understand the research sources they found and consider how they might use these sources to write an evidence-based argument.

INTRODUCTION TO “MYTHS”

On the first day of class in PSY101, the professor asked students to decide whether 20 claims in psychology, most of which are cited as common “myths” (Lilienfeld et al., 2010), were true or false. The professor avoided using the word “myth” and instead used the word “claim” in class discussions. An ambiguous word like “claim” promoted student consideration of myths without bias. Also, this might have helped avoid confirmation bias when students found and used evidence to support their stance. In addition to traditional “myths,” the list also included statements for which evidence exists on both sides (e.g., mental illness is caused by a chemical imbalance in the brain) as well as claims where the evidence favored “true” rather than “false” conclusions (e.g., the brain shows as much activity when we are asleep as when we are awake). Grappling with conflicting evidence in claims such as these should promote later comparison among sources for credibility and evidence, which is important when students are deciding what “to believe.” This also prevented students from assuming claims were always false.

ACTIVITY

MOZART EFFECT: ASSIGNMENT 1

During a subsequent class session (7-8 weeks later), the class confronted the claim “Playing classical music to infants will make them more intelligent” together through reading and collaborative evaluation of a scientific source related to that claim. This assignment on “The Mozart Effect” was strategically placed just after class discussions on patterns and errors in human thinking, including availability heuristics, “person-who” reasoning, and type 1 and type 2 thinking. It was also placed just before discussions of development, as it introduced concepts of how the environment might impact development.

Assignment 1 began by asking students to evaluate errors in psychological thinking (availability heuristic and/or person-who reasoning) in personal accounts of “evidence” for a relationship between music and intelligence. Students then provided an example of an alternative, more evidence-based approach that researchers could use to evaluate whether or not classical music had an effect on intelligence, with the opportunity to cite prior course discussions on appropriate experimental design in their response. Small groups discussed and reviewed student work, and class discussion helped address misconceptions.

Students then read and summarized (2-3 sentences) the main findings in “Music and Spatial Task Performance” (Rauscher et al., 1993). This article worked well in an introductory course; it is a single page, uses accessible

language and straightforward analysis, and mentions some caveats in its final paragraph, which can prompt broader discussion of evaluating research articles. The critique referenced previously discussed factors in research methodology such as sample size and composition, operational definitions, and statistical evaluation of experimental differences. Students then reflected, in writing and aloud, on how well the article provided evidence for the claim, "Playing classical music to infants will make them more intelligent." Finally, in order to introduce the idea of "researching" a claim as gathering and evaluating varied pieces of evidence, students were asked to find one piece of evidence AGAINST the claim. They read it and commented on whether or not this new evidence was more or less trustworthy. Discussion then addressed how popular media presents scientific findings with news stories about the Mozart effect referenced to emphasize this point. These conversations could explore the contrast between popular science and media stories vs. primary literature sources as evidence, which can further promote the development of discernment in students.

ASSIGNMENTS 2 AND 3: CHOOSING A CLAIM AND FINDING SOURCES

After Assignment 1, students began a series of 3 connected assignments. For simplicity, we will refer to these as Assignments 2, 3, and 4, but in the course, they were called "final assignment part 1, part 2, and part 3." This emphasized progression across the assignments and promoted the use of course discussions and feedback to guide improvement. The instructor allowed work on part 2 within a course session and provided regular opportunities for questions, as well as written feedback on part 2 prior to submission of part 3, which provided students with important guidance and support for this multi-step, process-based assignment.

An entire course session (90 minutes) was devoted to Assignments 2 and 3. At the start of class, students chose one claim from the first day of class that they were interested in further researching. The professor introduced the expectations for the multi-step assignment. The instructional librarian joined the class and led the middle of the session, and both the instructor and librarian assisted during the independent student work that took place at the end of the session.

Students completed Assignment 2 in the first 10 minutes of class; this assignment asked their initial opinion of their chosen claim (true or false), and four reasons for that opinion (first-hand experience, saw a social media post, read an article, etc.). They then asked a friend's opinion, reflected on whether this outside opinion was "evidence," and if it reinforced or changed their own opinion. The instructor graded assignment 2 on demonstration of some critical reflection. Though small and low stakes, this assignment allowed students to share their initial understanding and evaluation of the claim and reflect on how their position and reasoning may change over the course of the assignment. The instructor and librarian could also evaluate this change. This assignment may be valuable for understanding how additional opinions may impact beliefs or rationale and, more importantly, understanding the research students performed for Assignments 3 and 4.

The librarian then introduced students to library resources that they might use to find additional sources related to their claim and reviewed how to evaluate source credibility and evidence, the two main themes of Assignment 3. This class session included librarian-led demonstrations, class-wide or small-group reflection and discussion, and consideration of specific examples of sources with evaluation of credibility and the evidence within them. This interactive session allowed for the assurance of understanding of main concepts and the asking of questions before students embarked on their work.

Students then began Assignment 3, which involved finding and evaluating four sources related to their claim. Specifically, students practiced developing keywords for researching their claim, reviewed the concept, form, and

structure of scholarly, peer-reviewed sources (introduced in Assignment 1), and searched APA PsycNET for sources relevant to their claim. For each source, students provided a full reference and in-text citation in APA format, briefly summarized the main findings, identified the position of the source relative to the claim, summarized the evidence for or against the claim, and evaluated the source's credibility and evidence. To guide their work and help organize their thoughts, students used a grid in this assignment. This grid's format allowed students to see and keep track of the expectations of this assignment. Both librarian and instructor circulated the room as students worked and asked questions aloud to assess progress such as, "Who feels they have found a credible source;" with some students sharing their examples with the class. Shared practice allowed for reinforcement of skills and concepts. The instructor and librarian attended individually to students who had questions or needed support. Students also learned to use additional tools or search strategies, such as the "related sources" functions in Psycnet or where to find author information in a source. Assignment 3 culminated in a 2-to-4 paragraph written summary of how the sources contributed to validating or invalidating the claim. The instructor also discussed the process of converting the "grid" information into a written format.

The instructor reserved part of a second class session, 5-7 days later, to check-in with students regarding their progress. Students brought Assignment 3 to use during this discussion. This follow-up allowed for reinforcement of main concepts and reminders of the goals and expectations of the assignment, while giving room for additional questions and time for the instructor to further assist students and/or refer them to the librarian for an individual research consultation. This second session overlapped with the instructor introduction of Assignment 4 and provided an opportunity for the instructor to emphasize how Assignment 3 would be useful in completion of Assignment 4.

ASSIGNMENT 4: WRITTEN EVIDENCE-BASED SUMMARY

The final assignment asked students to prepare a more extensive written, evidence-based argument evaluating their claim as true or false. This argument summarized the claim as true or false based on the evidence they read and also addressed the complexity of the claim (e.g., how it was operationally defined or how it was represented differently for different audiences and purposes) and possibly, conflicting evidence. The instructor reviewed assignment requirements and provided a sample assignment and rubric. Grading criteria emphasized the use of evidence to support a well-organized written argument. Ideally, students used instructor feedback on Assignment 3 to complete Assignment 4, which maximized the formative nature of this assessment. In that feedback, faculty commented on the strength of sources, the evaluation of them, and/or recommended alternate sources.

Students used APA format for attribution of information to appropriate sources and documentation of such sources. The sample assignment utilized these and other aspects of APA format including title page, running header, and more. The use of full APA format was encouraged but not formally evaluated as part of the grade. Organization of the paper and the use of clear evaluative language (rather than summary) received particular emphasis. If time allowed, a portion of a future course session was used for draft revision before final submission.

ASSESSMENT AND NEXT STEPS

The main learning goal of these assignments was improved information literacy. Initial attempts at assessment asked: 1) did students reliably find and use primary sources in their assignments, and 2) did students accurately report indicators of credibility and/or evidence in their sources? As this assessment was preliminary and lacking a true "control" condition, only quantitative and qualitative patterns evident were evaluated in assignments.

Students used primary sources 67% of the time. However, 60% of students made errors in their in-text citation format, and 45% made errors in full reference format. The average number of accurate indicators of credibility was 5.2 ± 0.7 (mean \pm SEM), and the average number of accurate indicators of strong evidence was 4.7 ± 0.7 . Whether or not the publication was in a reputable journal, the author credentials, and whether the source was reliably referenced were commonly reported measures of credibility. Evidence was most often evaluated based on how the source provided evidence regarding the claim, experimental design, and whether or not the evidence was generalizable. Although most cited indicators did not require advanced understanding of experimental methodology, there was repeated mention of sophisticated concepts such as appropriate control groups, operational definitions, and statistics. Some students (50%) did not consistently distinguish between credibility and evidence. Increased emphasis on these distinctions moving forward may alleviate this confusion. Assessment is ongoing regarding the degree to which student opinions changed from initial opinion to final evaluation, which themes consistently emerged in evaluation of evidence and credibility, and the degree to which student background in research methodology might impact student process and performance.

CONCLUSION

This series of assignments promoted information literacy in an introductory course, but instructors could easily adapt this approach for other, more advanced electives. Each step of the assignment relied on the others to varying degrees. Presentation of psychology myths on day 1 could prompt class wide discussions of psychology as an empirically-driven science. This type of discussion, early on in a course, can support any number of subsequent assignments. Assignment 1 (Mozart effect) could also be used in isolation to introduce students to primary literature and begin discussion of how to understand and evaluate articles for their experimental design, operational definitions, data display and statistics, generalizability, and more. How popular media outlets report and represent scientific findings can be a helpful extension, which aligns well with considerations of what qualifies as evidence, a clear focus of these assignments. Assignment 2 may connect nicely to content on thinking and development and allow for personal reflection on what drives one's own beliefs; it served as a gateway for Assignments 3 and 4, which promoted evidence-based evaluations of claims. The flexibility of assignment 3 means that instructors can adapt it for broad use as they encourage students to find, evaluate, and use research-based sources in the context of any research paper assignment, and the written final summary provides a way for students to practice writing succinct, evidence-based arguments. Assignment 4 serves to further that writing ability, and although it could also be presented in isolation, it might overwhelm students who have little experience searching for psychology literature or primary sources, writing in APA format, and/or writing arguments. Whether presented in isolation or in series, these assignments align well with a number of APA goals. Although the clear focus is the promotion of psychological information literacy, these assignments also help students understand and evaluate research methodology within primary sources and prompt considerations of generalizability of research. The varied claims connect to a broad range of content areas, and student research and course discussions further develop understanding of those topics. Assignments 3 and 4 clearly focus on effective writing technique. Further, the formative nature of the assessment utilized across assignments may be particularly useful given the varied background, skills, and expertise students bring to an introductory major and support course. It is our hope that this assignment will also promote the development of students as skeptical evaluators of all information and improve discernment abilities across disciplines.

ACKNOWLEDGEMENTS

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ASSIGNMENT 1: THE MOZART EFFECT

You are discussing if playing classical music to babies and children makes them smarter. This is historically known as “the Mozart effect.” One friend insists that this is true; his aunt played classical music for her kids, and they are all super smart. Another friend insists that this is NOT true; his mother played classical music a lot, and he and his siblings are average intelligence.

1. Think back to probability and heuristics. What sorts of heuristics or estimates are influencing your friends’ judgments about Mozart and intelligence?
2. What would be a more accurate way to evaluate whether or not classical music exposure during infancy improves intelligence?
3. **STOP:** Read the article provided in class, “Music and Spatial Task Performance”, by Rauscher and colleagues (1993). Summarize the main findings in 1-2 sentences.
4. After reading this source, what do you think about the connection between playing Mozart and intelligence?
5. On a scale of 1-5, at this point, how convinced are you about this connection between classical music and intelligence (1=*not at all convinced*, 5=*very convinced*).
6. What would make you MORE convinced?
7. Find one piece of evidence AGAINST this claim and list it below. Is it more or less trustworthy? Why?

ASSIGNMENT 2: CHOOSING AND REACTING TO A POP-PSYCHOLOGY CLAIM

List your chosen claim:

Take a position on this topic: do you agree or disagree? Why do you agree or disagree? No looking on your phone or talking to other people, just your opinion.

What are the reasons for your opinion? Try and list multiple things that might be affecting why you think this way. Think back to the conversations we had in class about memory, thinking, decision-making, etc. You should provide at least FOUR reasons why your opinion is what it is.

Ask at least one other person for their opinion on this topic; you can ask a classmate, text someone, post a poll on Instagram or twitter, etc. What response(s) did you get?

How does getting input from others influence YOUR opinion? Does it change it at all: make it stronger or weaker? Why or why not? Would WHO or HOW MANY PEOPLE you ask influence whether or not your opinion changes? Why or why not?

SLIDES: FINDING AND EVALUATING SCHOLARLY SOURCES

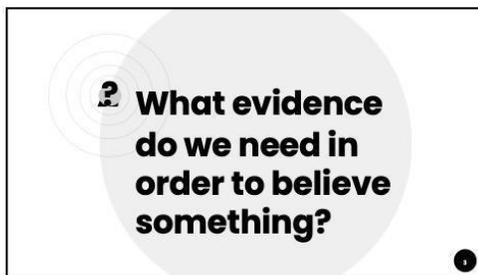
Slides are available at: https://docs.google.com/presentation/d/1oJtio2O7Gg4Sq5TMpOtx_T2ocwSIHGmF-47Zp-jVos/edit?usp=sharing



1



2



3



4



5



6

Turn your question into keywords

Are people better in classical music as children or later as adults?

music	children	intelligence
classical music	infant	performance
music tempo	preschool	spatial intelligence

7

8

psycnet.apa.org

9

10

Next 10-20 minutes

- Try to find at least one empirical journal source that shows research related to your claim.
- Use the additional tools to find relevant sources.
- Play around with keywords to find new and different things.
- Review articles can be helpful in finding primary sources.
- What can you tell from the abstract? If possible try to find at least one source that offers support and at least one that offers conflicting advice.
- Put the full citations in the grid that you're now asked to fill in!

11

2 Evaluating Credibility & Evidence

Questions to ask and things to look for

12



13

Ways to evaluate credibility

- If the author is named, what are their credentials or authority or expertise?
- What is the audience for this source?
- How was the information or research funded?
- Are other sources cited? What is the relative credibility of those other sources?
- How are other sources of those quoted, paraphrased, or summarized represented? Are they misrepresented or are important parts omitted or glossed over?
- What are any needs related to currency? Does this source meet your needs?
- What methods are used to study this problem. Are they currently generally accepted by scholars?

14



15

Evaluating Strength of Evidence:

- Is the amount of evidence sufficient?
 - Did they study enough subjects?
 - Are there replication studies on these?
- Is the evidence transferable?
 - Is the situation one that resembles real life?
 - Is their experimental situation?
 - What variables might change the results?
- Is the evidence related to the problem?
 - Are abstract terms defined for this intelligence? What does it mean?
 - How are the variables operationalized? What is being measured?
- How does this compare to other research? Are the findings similar? Different?
- Might there be hidden or confounding variables?

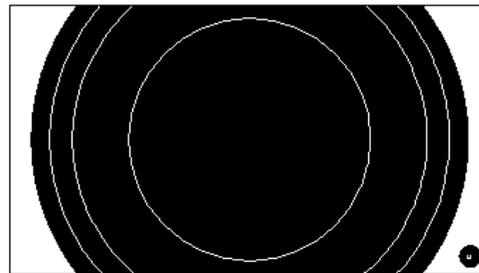
16

Disconnect between the popular notion and research claims

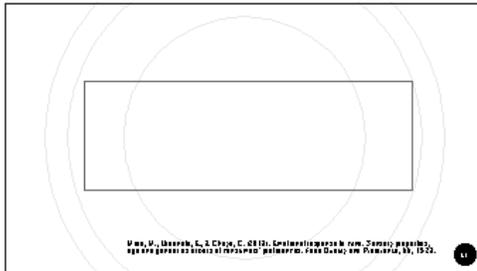
I decide not to believe that listening to classical music as a child makes someone smarter throughout their lifetime.

But I am convinced by the evidence for short-term increased ability in spatial-temporal reasoning after listening to classical music.

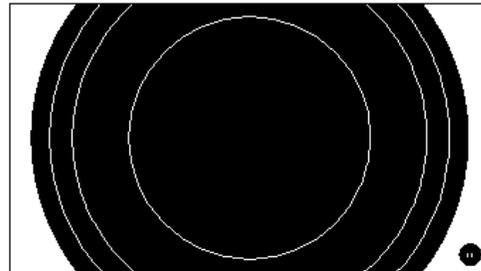
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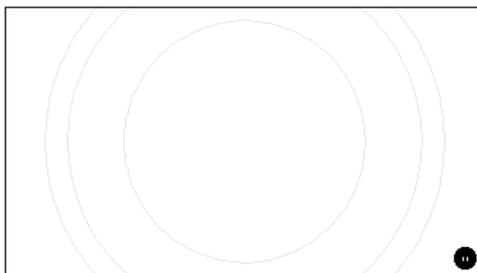
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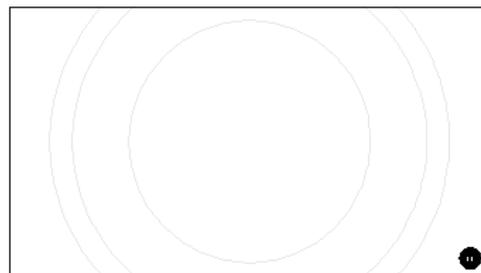
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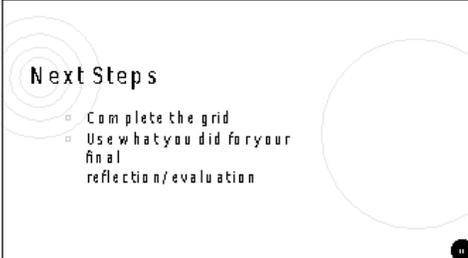
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24

Next Steps

- Complete the grid
- Use what you did for your final reflection/evaluation



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When writing your evaluation/ essay

CITE & INTEGRATE YOUR SOURCES

Attribute ideas and claim as a specific source.

Included by several other sources, it's not in a source may.

If you're citing multiple sources, list them logically and separate citations with semicolons.

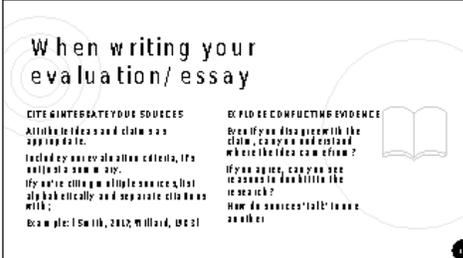
Example: Smith, 2012; Millard, 2011

EXPLORE CONFLICTING EVIDENCE

Even if you disagree with the claim, compare and contrast where the idea can confirm?

If you agree, can you see reasons to see both the research?

How do sources 'talk' to one another?



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Thanks!

Any questions?
You can find me at:

- slayevale@mswimtest.com
- McGill ID#

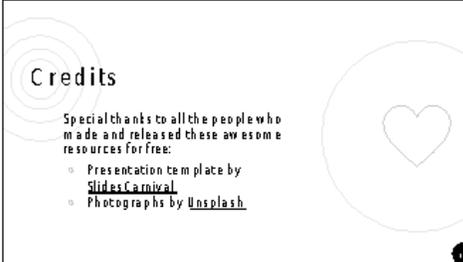


27

Credits

Special thanks to all the people who made and released these awesome resources for free:

- Presentation template by [Slides Carnival](#)
- Photographs by [Unsplash](#)



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ASSIGNMENT 3: THE GRID (EVALUATING EVIDENCE AND CREDIBILITY IN SOURCES)

Source (Full APA Reference):				
How would you cite it in text:				
Summarize the findings:				
Is this providing support for or against the claim:				
Summarize the evidence for/against the claim:				
Other notes:				
How credible do you think this source is? (1-5) Briefly explain your choice:				
How strong do you think the evidence for/against the claim is? (1-5) Briefly explain your choice:				

SAMPLE ASSIGNMENT 3: PARTIALLY COMPLETED GRID ON "THE MOZART EFFECT"

Source (Full APA Reference):	Steele, K. M. (2006). Unconvincing evidence that rats show a Mozart effect. <i>Music Perception</i> , 23(5), 455-458. http://dx.doi.org/10.1525/mp.2006.23.5.455	Su et al. (2017). How does Mozart's music affect children's reading? The evidence from learning anxiety and reading rates with e-books. <i>Journal of Educational Technology & Society</i> , 20(2), 101-112.
How would you cite it in text:	(Steele, 2006)	(Su et al., 2017)
Summarize the source:	This article is a commentary on a response to Steele's 2003 article where they study notes and tones that rats can hear. The 2003 article	5 th and 6 th grade students read e-books slightly above their reading level in silence and then while listening to a Mozart piece. The technology and a

	was an attempt to provide evidence against an article by Rauscher.	test after reading tracked their speed, comprehension, and higher-order thinking about what they read. This was done in their classroom.
Is this providing support for or against the claim:	Against the claim	Support for the claim
Summarize the evidence for/against the claim:	This article discusses previous research by the author that studies the ability of rats to hear certain notes and tones as compared to humans and the fact that rats are born deaf so that they cannot "hear" anything. This article also discusses the fact that many labs and authors have not been able to replicate Rauscher's experiments on rats or humans.	When listening to Mozart, students had lower anxiety and better reading comprehension/speed.
Other notes:		
How credible do you think this source is? (1-5) Briefly explain your choice:	<p>3: +</p> <ul style="list-style-type: none"> ● Lots of citations, especially of studies that have not found a 'Mozart effect' ● Peer reviewed ● Psych professor with lots of research on music and intelligence <p>-</p> <ul style="list-style-type: none"> ● Commentary on research, not a primary source. ● Not super objective in tone, it seems like Steele and Rauscher are in the academic version of a bar fight. 	<p>4: +</p> <ul style="list-style-type: none"> ● Demonstrated knowledge of the literature, lots of citations ● Peer-reviewed publication ● Objective tone, claims are supported with evidence ● Recently published ● Acknowledges studies that support and don't support music as a helpful tool for reading ● Researchers admit to limitations/negative findings improving their credibility <p>-</p> <ul style="list-style-type: none"> ● Authors have academic credentials but 6 authors all seem to be computer engineers. Would benefit from different psych related background maybe ● Just one study, I need to learn more in the literature
How strong do you think the evidence for/against the claim is? (1-5) Briefly explain your choice:	<p>4: +</p> <ul style="list-style-type: none"> ● Documentation or failure to replicate and what seems like Rauscher's defensiveness is interesting and valuable evidence against the claim. It seems like there's a large body of evidence that rats do not show a Mozart effect. <p>-</p> <ul style="list-style-type: none"> ● Focus on rats doesn't tell us all we might want to know about humans 	<p>2: +</p> <ul style="list-style-type: none"> ● Looking at specific scenario, not too broad ● Scenario is real to life <p>-</p> <ul style="list-style-type: none"> ● Findings may not be transferable to original claim ● Small sample size, only Taiwanese 5th and 6th graders ● Music session was always second- students might be less anxious doing something the second time anyway

	<ul style="list-style-type: none"> Possible confounding variables. Even if rats can't hear music, could it be impacting them in other ways? 	<ul style="list-style-type: none"> Evidence for in anxiety and reading speed, but students were less likely to remember what they read or answer analysis questions. Increase in extraneous load while reading.
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ASSIGNMENT 4: INSTRUCTIONS FOR EVIDENCE-BASED WRITTEN ARGUMENT AND RUBRIC

You will write a paper that states whether or not you think the claim you were assigned is true. Your position **MUST BE DEFENDED** with sources. So, you cannot just say, "This is true." You must say, "This claim is supported by evidence showing that... (and here, you list the evidence and the sources in which you found it)." This assignment should build directly off of part 2 of the assignment and incorporate the feedback you have received on that assignment and in class (though there is no requirement to use the same sources if you have found more useful sources in the interim). You should also use the information, suggestions, and feedback you received during the draft revision session in class to improve your paper.

1. This assignment is worth 50 points. Late assignments will lose 10% of total points per day.
2. Your assignment should be 3 full pages at minimum, 4 full pages at maximum. The title, abstract, references, etc. do NOT count toward the page limit, meaning you need 3-4 FULL PAGES OF TEXT. You do NOT have to include an abstract. Use font no larger than 12pt and margins no larger than 1 inch.
3. You **MUST** cite FIVE sources you have used as part of this assignment. At least FOUR must be primary articles. Use APA format as much as possible, but especially for citations. There are multiple sources online about APA style, and we covered this in class.
4. You **MUST** paste the rubric into the bottom of your paper prior to submission. If you do NOT, you automatically lose 3 points. Ideally, you'll look at the rubric and confirm that your paper contains all the elements listed in the rubric and revise as needed.

As always, please feel free to ask questions. This assignment should build heavily off of your grid assignment.

Prior to submission, you need to paste the rubric (on the next page) into the bottom of your document. I would strongly suggest using the rubric to grade yourself on the assignment, and then revising and improving your paper to improve your grade. You are encouraged to use the academic success center for help with writing.

RUBRIC

PLEASE NOTE, for the content of the paper, you MUST address the aspects IN BOLD. The others are there for you to think about, some may be important for your claim, others may not. Don't feel obligated to address them all.

CONTENT (36 pts, divided as shown below):

Introduction (8 pts): Is the claim stated and explained? Is your position on the claim stated? Is the purpose of the paper introduced?

This could also include 1) Potential issues with the claim: Is the claim difficult to evaluate? Are there words in the claim that are confusing, subjective, or that need to be operationally defined? 2) The source of the claim: where did this idea come from? Is there controversy surrounding this claim? Why might some people think it is true? Was there an original article, or series of articles? A popular science theory? Part of a TV show or movie? Someone famous who suggested it?

Main content of the paper (20 pts):

Evidence supporting position: Is your opinion stated DEFENDED with sources? Are those sources credible, and do they truly provide evidence for or against the claim? How good/bad is that evidence? Are multiple sources used? Are DIFFERENT pieces of evidence provided to support multiple arguments (i.e., don't make one argument and then just repeat it five times with five different sources)?

Evidence against the position: If you think the claim is true, do you explain why opposite evidence is poor, not credible, or flawed?

Conclusion (8 pts): Is there a summary of the claim and evidence and integration of how the evidence together provides a solid argument? Note: integration and summary are different. You need to summarize AND integrate.

ORGANIZATION AND STRUCTURE OF PAPER:

Organization (4 pts): Does the paper have an intro, main text, and conclusion? Are paragraphs used that focus on single themes (instead of just one, long, run-on paper?). Are the paragraphs well-connected, and do they flow well?

Language (4 pts): Are the ideas clearly stated? Are appropriate psychological terms and phrases used? Does the paper demonstrate an understanding of psychological ideas and of research, sources, and evidence?

Grammar (3 pts): Is the paper free of spelling, phrasing, punctuation, and formatting errors? Are sentences well-constructed and clear?

Format (3 pts): Are the sources cited within the text using APA format, and is the reference list provided in APA format?