

## APA STYLE – RULES AND GUIDELINES (updated for the 7<sup>th</sup> edition)

**Disclaimer:** I created this document for my students to use in my courses. If you are not in my course, please address any questions or discrepancies with your instructor. Saying “I used Dr. Noles’ guide” is not a valid reason for failing to follow the requirements of your assignment. If you notice any errors or have ideas for improvements, please email me at [nolese@uncw.edu](mailto:nolese@uncw.edu). This document is accurate to the best of my knowledge. All new changes found in the 7<sup>th</sup> edition of the APA Manual are noted in yellow highlighting.

**Student Sample Paper provided by APA** - <https://apastyle.apa.org/style-grammar-guidelines/paper-format/student-annotated.pdf>

### Margins

- 1 inch (all sides)
- Flush left margin, right margin jagged – choose “align left” in Word

### Font

- Use the same font throughout the paper
- Options include 11-pt Calibri, 11-pt Arial, 10-pt Lucida Sans Unicode, 12-pt Times New Roman, or 11-pt Georgia – 7<sup>th</sup> ed.

### Spacing

- All double-spaced (right click in document, select paragraph, select double spaced, set spacing to 0 pt before and 0 pt after – you must do all these steps unless you have already changed the default settings in Word)
- No extra spaces after titles/headings/paragraphs

### Indents and Centering

- Normal .5” tab for paragraphs (except Abstract – do not indent 1<sup>st</sup> line of abstract)
- Sections titles (Title of paper, Methods, Results, Discussion, References) should be centered

### Italics <https://apastyle.apa.org/style-grammar-guidelines/italics-quotations/italics>

- Book and journal titles
- Letters related to statistics (e.g., *n*, *t*, *M*, *SD*, *F*, *p*)
- Anchors on a scale (1 = *strongly disagree* to 5 = *strongly agree*)
- Use for key terms or phrases that accompany a definition – 7<sup>th</sup> ed.
  - *Mindfulness* is defined as “the act of noticing new things, a process that promotes flexible responding to the demands of the environment” (Pagani et al., 2016, p. 91).
  - *Guided imagery* aids individuals in connecting their internal and external experiences, allowing them, for example, to feel calmer externally because they practice thinking about calming imagery (Jacobsen, 1938; Trakhtenberg, 2008).

### Quotation marks <https://apastyle.apa.org/style-grammar-guidelines/italics-quotations/quotation-marks>

- Use quotation marks for direct quotes
- Use quotation marks for linguistic examples instead of italics – 7<sup>th</sup> ed.

### Bold

- Use for the title of the paper on the title page and for the title typed at the top of the first page of the manuscript – 7<sup>th</sup> ed.
- Use to denote the words Abstract (7<sup>th</sup> ed.), Method, Results, and Discussion
- Use to denote subsections and most other headers within the paper (e.g., Participants, Materials)

### Page Numbers

- Top right corner on every page (in header)

### Page Header

- Running head not required for student papers not being submitted for publication, just add page number in top right corner – 7<sup>th</sup> ed.
- For papers being submitted for publication, do not to use the words “Running head” on the first page. – 7<sup>th</sup> ed.
  - Shortened title written in all caps containing a maximum of 50 characters
  - Top left corner on every page using the header function in Word
  - Title page should have header titled SHORTENED TITLE IN ALL CAPS (insert your own shortened title)

- Every subsequent page just has the title in all caps (i.e., SHORTENED TITLE IN ALL CAPS)
- Use a PC computer, double click in header section, you must insert page numbers first, type SHORTENED TITLE IN ALL CAPS on the first page, and make sure it's spaced to be flush with the left margin with the page number flush against the right margin
- Make sure header is same font as paper text

### Order of Sections

- Title Page → Abstract → Introduction → Method → Results → Discussion → References → Tables → Figures → Appendix

### Headers within the Paper – 7<sup>th</sup> ed.

- 1<sup>st</sup> level headers (e.g., title of paper on title page and first page of paper, Abstract, Method, Results, Discussion, References)
  - Every major word is capitalized - centered and bolded
  - Text starts as a new paragraph on the line below these words
- 2<sup>nd</sup> level headers (e.g., Participants, Materials, Procedure, different topical sections in the Introduction)
  - Every major word is capitalized - left aligned and bolded
  - Text starts as a new paragraph on the line below these words
- 3<sup>rd</sup> level headers (e.g., discussing each type of material/survey used)
  - Every major word is capitalized - left aligned, bolded, and italicized
  - Text starts as a new paragraph on the line below these words
- 4<sup>th</sup> level headers (e.g., breaking the info down into smaller chunks under the 3<sup>rd</sup> level header)
  - Every major word is capitalized - indented with a .5" tab, bolded, and ends with a period
  - Text starts on the same line as this header
- 5<sup>th</sup> level headers (e.g., breaking the info down into smaller chunks under the 4<sup>th</sup> level header)
  - Every major word is capitalized - indented with a .5" tab, bolded, italicized, and ends with a period
  - Text starts on the same line as this header

### Mechanics of APA Writing (see link for examples) <https://apastyle.apa.org/style-grammar-guidelines/grammar/>

- Be precise with your words.
  - If a study showed that men reported higher self-esteem scores than women, you would not be justified to say all men always have higher self-esteem than all women. You only know that men in this specific study reported higher self-esteem scores compared to women. You can't assert that this difference is always true for all people.
  - Avoid using (or implying) words like "proves", "all", "always", or "never" in scientific writing.
    - Be precise by using the words "reported", "indicated", or "suggested" to clearly explain data derived from participants.
  - If you are discussing a correlational finding, your words should not imply causation. You can't say that being a man caused participants to have higher self-esteem; you only know they are associated. If the research you are discussing did not contain a true experiment, you need to use words like "associated", "correlated", "related", etc.
  - If you say things like "more", "less", "higher", "lower", "greater", etc. when talking about findings, then you must provide a comparison group. If you say men reported higher self-esteem, then it's important to state the comparison group – women, boys, kittens, aliens?
  - Be careful with phrasing of information. When using a phrase like "A study looked at...", you should ask yourself whether studies can look at things. Do they have eyes? "Researchers examined..." would be a more precise phrase.
- Do not use fluffy words that are unnecessary when describing previous research
  - Example: "Previous studies have been conducted by researchers that show that testing oneself during studying improved learning (citation)." Just say "Testing oneself during studying improved learning (citation)." If there's a citation after a statement, the reader knows these are research findings.
    - Examples of fluffy phrases include – "Previous research has been conducted...", "Researchers conducted a research study...", "In order to determine whether or not..." – this phrase can be stated as "To determine whether..."

- Avoid jargon/slang/colloquial terms/unnecessary “fancy” words
  - Do not use overcomplicated definitions/words (i.e., “We conducted an empirical investigation of the aesthetic ratings of mature homo sapiens’ facial orientations” should be “We examined adults’ facial attractiveness.”). Your goal is to help the reader understand important information, thus your words should be precise and clear.
  - Do not use slang or things that can be difficult to translate into another language.
    - “On the other hand...”; “In other words...”; YOLO; etc.
  
- Remain objective and impartial in your writing.
  - Your job as the author is to convey information without personal bias. You should avoid inserting your opinion, beliefs, or feelings. Objectively explain the concept or research and let the reader form an opinion based on facts.
  
- Verb tense <https://apastyle.apa.org/style-grammar-guidelines/grammar/verb-tense>
  - All verbs related to past research should be in past tense (e.g., “improved”, “indicated”, “found”, etc.). The research and the associated findings happened in the past, thus you should use past tense verbs when discussing it. If it happened in the past, then you need past tense verbs.
  - Most of your paper should be written using past tense verbs because by the time a reader would be seeing the paper, all the processes and analyses would have happened in the past.
    - “Noles (2019) examined the impact of APA Guides on student learning.”
    - “Participants completed the survey on their personal electronic device.”
    - “Participants in the control group reported more anxiety than those in the treatment group.”
    - “Previous finding indicated that...”; “Data suggested...”; “The current study investigated...”
  - The Discussion section may have present tense verbs when discussing the implications of the current study and related to the limitations and future direction of research.
    - “The results suggest that men...”; “Limitations of the current study include”
  
- Active Voice
  - Avoid passive voice when possible – make the subject of the sentence active.
  - Active voice means writing to answer the question “who did what?”.
  - The easiest way to start working on using active voice is to search your paper for the words “were” and “was” and then restructure the sentence. Most sentences use active voice to reduce wordiness and improve clarity.
    - Wrong – “Participants were shown 12 pictures...” or “Participants were asked to complete...”
    - Right – “Participants saw 12 pictures...” or “Participants completed...”
    - Wrong – “Research was done to examine...”
    - Right – “Research examined...”
  
- Pronouns
  - If possible, avoid “I”, “we”, “you”, “he”, “she”, “he/she”, “he or she”, “s/he”, “my”, “our”.
    - Wrong – “We should conduct more research...”
    - Right – “Researchers should continue to investigate...”
    - Wrong – “This issue is important in our society...”
    - Right – “This issue is important in American society...”
  - Only use “we” and “I” when referring to you and/or your colleagues as researchers when discussing your predictions, methods, or findings. It’s generally best to reduce the use of these words when possible.
    - You should only use “we” if there is more than one author. If it’s just you, then it should be “I”.
  - Do not refer to previous researchers using gendered pronouns (i.e., “She found that people often...”) – avoid gender specific pronouns in scientific writing.
    - In addition to reducing bias, you also don’t always know the gender of a person from their name or appearance. Many names are used by both genders, and gender is usually unimportant when discussing researchers.
    - You should use “they”/”their” if it’s absolutely necessary; “they”/”their” can be used as a singular pronoun to refer to one person. – 7<sup>th</sup> ed.
  
- Numbers <https://apastyle.apa.org/style-grammar-guidelines/numbers/>
  - Use digits for measurements, stats, dates, numbers above 10
  - Write the word for numbers less than 10 or if the number is the first word of the sentence

- Contractions
  - Do not use them; write out the words
- Consistency
  - Use the same terms for the same concepts throughout your paper
    - If you are talking about perspective taking, do not refer to it as perspective taking in one paragraph and empathy in another paragraph. Be consistent when using labels for race/ethnicity or gender.
- Researcher/Author/Experimenter
  - Researchers/Authors – people who conducted the research
  - Experimenters – people who administered the actual experiment
- Referring to Previous Research
  - The phrase “the current study” only refers to the study you are conducting. Don’t use this phrase to discuss a previous study that you are writing about.
  - Minimize starting a sentence with a reference to authors; this narrative citation places the emphasis on the people and not what they found. The emphasis should be on the findings, not the researchers.
    - Wrong – Baron and Banaji (2006) found that 6-year-old children demonstrated implicit racial bias.
    - Right – As early as 6-years-old, children demonstrated implicit racial bias (Baron & Banaji, 2006).

### Abbreviations / Acronyms

- Abbreviations <https://apastyle.apa.org/style-grammar-guidelines/abbreviations/>
  - Usually, it is best to avoid except for common ones instead just write out what you mean.
  - If abbreviating, first time it is mentioned spell it out and indicate abbreviation in parentheses; after that, only use abbreviation
    - “The affective priming task (APT) measures implicit bias. The APT has been used...”
    - “When looking at social media use (SMU)...”
- Common Acceptable Abbreviations:
 

i.e., – “that is”	e.g., – “for example”	etc. – “and so forth”
vs. – “versus”	et al. – “and others”	& – “and” (rarely used – see citations)

  - “Measuring implicit bias (i.e., non-verbal bias) has been done using a variety of tasks (e.g., the implicit association task, the affective priming task; Baron & Banaji, 2006; Degner & Wentura, 2008).
- Statistical Abbreviations:
 

M – mean	SD – standard deviation	SE – “standard error”
ANOVA – analysis of variance	F – ANOVA statistic	t – t-test statistic
p – significance value	r – Pearson correlation	

### Word Choice

- Affect vs. Effect <https://www.grammarly.com/blog/affect-vs-effect/>
  - Affect is a verb meaning “to influence”
    - “The stress induction negatively affected participants’ self-esteem.” or “The outlier data affected the results.”
  - Affect can be a noun and synonym for “emotion”
    - “The positive images increased positive affect in the participants...”
  - Effect is a noun and is synonym for “outcome”
    - “The effect of stress of cortisol levels was significant...” or “The effect of the mindfulness intervention...”
  - If you can substitute the word “result” or “outcome” then you need the word “effect”. If not then use “affect.”
- Feel vs. Believe
  - “Feel” refers to sensory experiences and “believe” refers to thoughts
    - “I feel warm in this room even though it’s only 74 degrees.”
    - “Researchers believe that stress can precipitate a psychotic break.”
- Since vs. Because
  - “Since” refers to time and “because” refers to cause and effect
    - “It’s been a long time since I saw my dog.”
    - “Because I miss my dog, I am going home this weekend.”

- Less vs. Fewer
  - “Less” refers to a continuous quantity that is difficult to count and “fewer” refers to a quantity you can count
    - “The mood was less hostile when they arrived.”
    - “Fewer students attend class on Friday.”
- Whether vs. Whether or not
  - Whether refers to alternatives
    - “Students decided whether to have class outside.”
  - Whether or not should never be used
- The word “this”
  - Anytime you use this word, you should always put a word after “this” to clarify what you are referring to in the sentence.
    - “This handout is very extensive and detailed.”
- The word “they”
  - Be careful when you use this word because it can quickly get confusing for the reader as to whether you are referring to the participants or researchers. Make sure you are clear and specific when you use this word.

### **Websites You May Find Useful for APA Formatting**

- Quick Guide to Writing Stats
  - <http://www.psych.uw.edu/writingcenter/writingguides/pdf/stats.pdf>
- Excellent Guides to APA Style
  - <https://apastyle.apa.org/style-grammar-guidelines>
  - <https://www.mybib.com/guides/apa-format>
  - <https://apastyle.apa.org/products/publication-manual-7th-edition/>

### **Title Page <https://apastyle.apa.org/style-grammar-guidelines/paper-format/title-page>**

- Make sure header is correct as described above if being submitted for publication, only page number for student papers
- Title of paper should be concise and clearly identify the important variables of the study.
  - Every major word in the title should be capitalized.
  - Should be double-spaced if it takes two lines (but you should avoid titles that take two lines – be concise)
  - Be careful not to imply cause and effect with correlational studies.
    - Wrong – “The effect of social media use on personality traits”
    - Right – “Examining associations between social media use and personality traits”
- Center the title on the page and bold it
- Center your name under the title – use your middle initial
- Center the name of your department and school separated by comma under your name – 7<sup>th</sup> ed.
  - Department of Psychology, University of North Carolina Wilmington (example)
- Center course title under the department/school affiliation– 7<sup>th</sup> ed.
  - PSY 464: Advanced Social and Personality Psychology (example)
- Center instructor’s name under the course title – 7<sup>th</sup> ed.
  - Dr. Erica C. Noles (example)
- Center the due date for the assignment under the instructor’s name – 7<sup>th</sup> ed.
  - October 18, 2020 (example)
- For papers being submitted for publication, check the APA manual for additional requirements.

### **Abstract**

- Title the page with the word “Abstract” centered, bolded, and on the first line of the next page after your title page – 7<sup>th</sup> ed.
- Start text on the next line, do not indent the first line of the abstract
- Abstract should be no more than 250 words that briefly describes the following:
  - Motivation for your study (i.e., sum up the Introduction) in ~ 2 - 3 sentences
    - Be sure to include an explanation that addresses *why* you conducted the current study – what makes it necessary or unique?
    - If you refer to specific findings from previous research to justify the purpose of your study, you should cite them.
  - Methods (i.e., what did you do) in ~ 2 sentences
    - Generally, you should mention the constructs you assessed, but you can avoid listing the specific scales you used in the study.
    - If you refer to specific scales in this section, you should cite them.

- You should specify researchers used an online study to assess the variables if the study was done online.
- Results (i.e., what did you find) in ~ 2 sentences
  - You should clearly explain the main findings in easy-to-understand words. You should use the word significant when appropriate, but the focus should be on clarity. A general audience with little scientific training should be able to understand the main findings of your study. Generally, you should avoid using statistical numbers in this section and focus on interpreting what the statistical tests indicated about the data.
- Conclusion (i.e., why is this important) in ~ 2 sentences
  - These last sentences should wrap up the abstract and focus on the take-home message. What was learned from the research? Why is this topic/study important? If very little was significant in the results, you can suggest that additional research is needed to further clarify the variables you assessed.
- Include 3-5 keywords that are relevant to your study centered on the page under the last line of text
  - The word *Keywords* is indented, italicized, has a colon after it, and is followed by relevant words that are not italicized.
  - Keywords are not required for student papers. – 7<sup>th</sup> ed.
- This section should usually be the last section you write after you finish the paper; you need to know the results before you can write the final abstract.

**Introduction** - see info below about reading journal articles and mechanics of APA writing before writing this section

- Title of your paper should be centered and bolded on the top line - 7<sup>th</sup> ed.
- Opening paragraph
  - Provide an everyday example of concept
  - Get the reader interested in your topic
  - May need to provide key definitions here to help the reader understand your concepts
    - Avoid defining every term in your paper in the opening paragraph, but you should ensure the reader doesn't get lost before they begin. For example, if your paper focuses on narcissism, you would need to clearly define and cite this term in first paragraph.
  - Make the reader see why this topic is important in everyday life
  - State the overall goal/aim/purpose of the study (not the specific hypotheses) in the last sentence so the reader knows where the paper is going.
    - "The current study assessed narcissism to better understand whether levels of narcissism differed among men and women. In addition to gender, researchers also examined how age differences may relate to narcissism."
- Body of Introduction paragraphs
  - Review relevant literature in a pattern that goes from broad definitions/overview of the topic down to the most specific, relevant studies for the current paper
    - The purpose of this section is for the reader to understand more about the research related to your current study. What has been done? What is known? What is still unknown?
    - You can organize the Introduction conceptually or historically. Generally, you will organize it conceptually unless you are researching a topic that has changed across time.
    - To help with conceptual organization, figure out the order you want to introduce each concept/variable and decide how you should transition between the important concepts/variables.
  - Organize the ideas/previous studies in a logical manner – think about this task as assembling a puzzle. How can you fit the pieces together to create a beautiful, cohesive picture for the reader?
  - Your literature review should start rather broadly and become more specific about how previous literature relates to the current study.
  - The reader should be informed about the topic and expecting what you are about to tell them in the final paragraph(s) regarding the purpose and predictions of the current research.
    - Think about this section as an upside-down pyramid – start broad and big picture and then narrow the focus slowly for the reader by giving them more details and interesting findings to think about as you prepare them to understand why it is necessary to conduct the current study. The research you discuss at the end of the Introduction should be very closely related to the type of study you are conducting.
  - Make sure you define all terms/concepts that the reader needs to know as soon as you talk about the concept – don't leave the reader wondering what you are talking about at any point in your paper.
    - You can use and properly cite the APA Dictionary for psychological terms; you can also use the journal articles you are reading and paraphrase their definitions.

- Each paragraph should have a strong topic sentence that introduces the paragraph; this sentence will provide a logical transition the reader if you frame it well. What topic are you about to discuss in the following sentences?
  - To make a strong case, you need the reader to follow your logic; help them follow your logic by including easy-to-follow ideas in the topic and concluding sentences of each paragraph.
- You are building your case/argument about why the current study is necessary by explaining what has been done, why is it important, what is missing, and how will you fix the problem.
- For newer writers, each paragraph that discusses previous research can follow a similar format.
  - Briefly explain the purpose of the study – why did they do the study and what did they want to learn?
  - Briefly explain how they conducted the study – how did they do the study?
    - Generally, it is not necessary to discuss the specific scales or measures used in previous studies. Focus on what they measured and why. For example, you can say the researchers assessed self-esteem and narcissism scores for each participant. If you are writing a paper comparing specific types of measurement, info about specific scales would be important to include, but most student papers do not need this level of detail.
    - If you do include the name of specific scales or measurements, they should be properly cited to give the author(s) of the scale/measurement credit for their work. If you said participants in a previous study completed the Rosenberg Self-Esteem Scale (Rosenberg, 1965) and the Narcissism Personality Inventory-40 (Raskin & Terry, 1988), then you would need to cite each scale as I did in this sentence.
  - Briefly explain the important findings of the study (focus on what the reader needs to know for the current study – not every single finding).
    - You should not include statistical numbers in this section; you should focus on clearly explaining the relevant findings from their research using words instead of numbers.
  - Briefly explain why it is an important finding(s) and formulate a question or idea that was unanswered by the study and still needs to be answered by future research. This idea should generally transition into the information you present in the next paragraph.
- Each paragraph should have a concluding sentence that wraps up the paragraph and sets the stage for the next paragraph to ensure your paper is cohesive and not choppy.
  - For example, “Though it appears that college-aged men tended to have higher narcissism scores than college-aged women, only surveying young adult participants makes it difficult to determine if this difference persists among older adults.” Using this type of concluding sentence would allow you start the next paragraph that focuses on age differences.
- All information in this section must be in your own words
  - The only exception, and it’s a rare exception, is related to definitions. If the original author defines the terms better and more concisely than you can, then you may use their definition. But you must properly cite a direct quote using quote marks, an APA citation, and page numbers.
  - Scientific writing does not generally use direct quotes; it is important to correctly paraphrase the information in your own words and not rely on direct quotes for these types of papers.
- I expect your entire paper to be in your own words; this process involves fully paraphrasing previous articles, not just changing a few words in a sentence.
  - Changing a few words but presenting the writing as your own is still plagiarizing. You need to fully reword the information and restructure every sentence. When taking notes from the original source, be sure to use quote marks when you are using direct quote to remind you to paraphrase the information in your paper.
  - All papers will be checked through Turnitin to assess plagiarism. In my class, you can see your score and the full report that shows you plagiarized sentences and the original sources after you submit the paper. It is your responsibility to check your paper, fix all issues, and resubmit a non-plagiarized paper before the deadline to avoid serious penalties.
- Next to the last paragraph
  - In most papers you should synthesize the relevant findings of the previous research you cited to provide the reader with the take-home message of the previous research (i.e., recap the big picture of what is known about the topic).
    - Pretend the reader ignored your entire literature review, what important findings would they need to know before reading your predictions? Be succinct when recapping what you have already written.
  - You can use this paragraph to point out any questions that are still unanswered by previous research or to point out inconsistencies between previous research; this information will provide a logical transition to your hypotheses.
  - You also have the option to briefly recap the previous findings when presenting the predictions (see info below).
- Final paragraph
  - This paragraph should clearly and accurately explain the purpose and predictions of the current study.

- “To provide clarity regarding how age and gender relate to narcissism, the current study used an online survey to assess people aged 18 to 65. In addition to asking about categorical gender, participants also completed a scale to measure how much they identified with masculine and feminine traits.”
- Briefly introduce the current experiment with minimal details; the full details will go in the Method section.
  - This “sneak peek” of your study is vitally important, especially if you have manipulations or important comparison groups. The reader can’t follow your predictions, if they don’t understand your variables or groups.
- Every variable you are testing/discussing must have been talked about in your literature review.
  - Do not add anything here that has not already been discussed in the literature review; this section is not the place to surprise your reader with a new concept. If you are making a prediction about a variable, you need to have covered the known information about this variable in the literature review.
  - If there is no known research about a variable in your study, then you need to discuss similar research in the literature review and use this information to clearly explain your prediction. Science is based on generating new ideas and data, but you must logically explain how you derived this prediction from similar findings.
    - “Though research has demonstrated x and y, there is no known research examining z. To further understand the impact that z may have on x and y, the current study examined how z related to blah blah. We predicted that z would blah blah...”
  - These predictions will directly guide the statistical tests you use to analyze your data. You will use these predictions to determine which tests you should run to assess your data.
- Depending on your format, you may use a list to clarify the predictions
  - See this link for more information and formatting <https://apastyle.apa.org/style-grammar-guidelines/lists/>
- When you state the hypotheses/predictions, you must cite the prediction if it is directly derived from previous research. If you didn’t come up with idea, give credit to the people whose research led you to this prediction. You can just add the relevant citation to the end of the sentence.
  - “In line with findings suggesting men reported higher narcissism scores than women (e.g., add a relevant citations), we had two specific predictions. First, we predicted that participants who identified as men would report higher narcissism scores than participants who identified as women. Second, we predicted that participants with higher masculinity scores would report higher narcissism scores compared to those with higher femininity scores.”
- If you are conducting an ANOVA, you must hypothesize about the expected differences (or lack of differences) for each main effect and the interaction; tell the reader exactly what you expect the data to reveal.
  - “We predicted a main effect for age suggesting younger participants (ages 18 – 30) would report higher narcissism scores than older participants (ages 31 – 65; add citation). We predicted a main effect for gender suggesting that men would report higher narcissism scores than women (add citation). Additionally, we predicted an interaction would indicate that younger men would report higher narcissism scores than older men or younger women.”
- If you are conducting correlations/regressions, you must hypothesize about the strength and direction of the relationship between each variable you are researching.
  - “Based on Author (year), we predicted a positive correlation between the amount of social media use and anxiety scores suggesting that more frequent users would report more anxiety than less frequent users.”
- If you are conducting *t*-tests, you must hypothesize about what differences you think will be significant and why.
  - “Considering previous research indicates that social media users experience more anxiety than non-users, we predicted that participants who used at least one social media site would have higher anxiety scores than participants who did not use social media (citation).”

## Method

- The word “Method” should be bolded and centered but do not use a new page for this section.
- The word “Participants” should be left aligned and bolded after the Design section; hit enter, then tab, then start typing on the next line. (Note – if you are writing this section before you have collected the data, use the “#” sign to indicate a missing or unknown number. You should complete this section with the correct numbers after data collection.)
  - “Three hundred and seventy-one individuals (160 cisgender women, 201 cisgender men, 4 transgender women, 3 transgender men, 1 nonbinary, 2 unreported;  $M_{\text{age}} = 32.4$  years; age range: 18-65 years) participated in an online survey. Researchers recruited the participants from a midsized university in Southeast.”
    - You can use this exact format; your sentence needs to tell me all this info (i.e., gender and age).
    - Reminder, you must spell out numerals (e.g. write three hundred and seventy instead of typing 370) when the number begins a sentence.
    - You can use percentages or  $n =$ , but be sure to italicize the  $n$  and add spaces around the equal sign.

- “Participants reported their race/ethnicity as Asian/Asian American ( $n = 14$ ), Black ( $n = 21$ ), Hispanic/Latinx ( $n = 25$ ), Multiracial ( $n = 35$ ), Native American ( $n = 2$ ), Pacific Islander ( $n = 2$ ), White ( $n = 258$ ), and unreported ( $n = 14$ ).
  - You can use this exact format to list anything that is important about your sample.
  - If you use White and Black to refer to race, then the words should be capitalized. Alternatively, you can use European American and African American; do not hyphenate.
  - Use of the word “Caucasian” is discouraged. – 7<sup>th</sup> ed.
  - You can use percentages or  $n =$ , but be sure to italicize the  $n$  and add spaces around the equal sign.
- Include information about how your participants were recruited/selected
  - If you used an online study, you need to explain how you recruited participants.
  - “Researchers sent survey links to family and friends via text message, email, and social media.”
  - Avoid mentioning specific schools or classes; this info is not necessary and may compromise the anonymity of your participants.
- Include information how the participants were compensated
  - “Participants did not receive any compensation for completing the survey.”
    - See info above about using active voice (i.e., “did not receive” is preferable to “were not given”)
  - “Participants completed the survey and received credit towards the required research credits in a different psychology course.”
- This section should include all relevant information about your participants. For example:
  - If you’re doing language-based tasks, report whether your participants were fluent English speakers.
  - If you’re doing education-based tasks, report participants’ education level.
  - If you’re doing relationship-based tasks, report participants’ sexual orientation and relationship status.
  - You need to assess and report any features that are relevant to your study.
- Do not refer to participants as subjects
  - Animals = subjects
  - People = participants
- The word “Measures” should be left aligned and bolded after the Participants section – hit enter, then tab, then start typing on the next line.
  - The goal of this section is to let your reader know exactly how you measured and/or manipulated your variables – be descriptive about the important elements but do not include details that are not important for replication.
  - If you used an online survey, be sure to state this information and say what survey software you used to create the survey.
  - If many different types of materials are used, break them up into subsections (see info above about formatting headers).
  - Each subsection title should start on a new line, be left justified, bolded, and italicized. On the next line under the label, start typing information about that measure. Do this process for each new measure used in the study to make it easier for your reader to understand each type of measure you used. – 7<sup>th</sup> ed.
    - If necessary, you can break up the materials into additional sub-levels of headers (see Figure 2.5 in the APA manual).
  - You need to include every measure that you used in your study. If the participant completed it, then it needs to be described with information about how they answered it.
  - To improve clarity, you will usually discuss the measures in the order that they were presented to participants.
  - Each measure should include the following information (see example below):
    - A citation if you used a published measure or information about how it was created and validated if you are using a measure that you created
    - If you only used small set of items from a longer survey, then you need to specify which specific item numbers you selected.
    - How many items were included on the measure?
    - The scale of the items reported in APA-format and what the scale means
    - Did you sum or average the scores? Were any questions reverse coded? What do higher scores mean?
    - If it’s a validated and published scale, you may want to include a few example questions from each measure to improve clarity. You could also include and psychometric properties of the scale.
    - If it’s a measure you created, then describe the scale or stimuli and say “(see Appendix)” at the end of the sentence(s). Include the entire scale and all stimuli as appendices. A researcher should be able to replicate your study based on this section and appendix.
    - If you have different conditions, be sure to clearly explain what materials were used for each condition.
    - If you included any pilot testing or manipulation checks, be sure to clearly explain them to the reader.

- Questions assessing demographic information (e.g., age, gender, race/ethnicity, etc.) do not have to be as detailed unless you did something unusual or unexpected.

#### **Self-Esteem**

Participants completed the Rosenberg Self-Esteem Scale to assess their trait-level of self-esteem (Rosenberg, 1965). Participants indicated their agreement to the 10 items using a 4-point scale (0 = *strongly agree* to 3 = *strongly disagree*). Researchers summed all responses; higher scores indicated higher levels of self-esteem. Five items were reverse coded.

#### **Attributional Complexity**

To measure preferences for making simple versus complex attributions when thinking about behaviors, participants completed seven questions from the Attributional Complexity Scale (Fletcher et al., 1986). To reduce participant fatigue, researchers selected seven items (i.e., items 3, 4, 15, 20, 21, 23, and 26) from the original 28-item scale. Participants responded on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*); two items were reverse coded. Researchers averaged all responses; higher scores indicated a stronger preference for complex thinking.

- The word “Procedure” should be left aligned and bolded after the Participants section – hit enter, then tab, then start typing on the next line.
  - The goal of this section is for the reader to visualize exactly how you conducted the study so they could replicate your study. This focus more on the order of the study to ensure the reader understand what the participant did in the study, and what the researcher did to prepare the data for analysis.
  - Include important step-by-step details about how your study was conducted – focus on what someone would need to know to replicate your study.
  - If you did a simple survey AND you described it in the correct order in the Materials section, you can simply say, “Participants completed the survey in the order described above.”
  - Work to reduce redundancy between the Procedure and Measures section; use logic to determine where it would make the most sense to describe important information (reminder – materials is for what they saw).
  - How did you recruit the participants?
    - Did you use random or convenience sampling?
    - If you used an online survey, where did you post the link to the survey?
  - What order did the participants see the tasks?
    - Did you counterbalance anything?
  - Were participants tested individually or in a group?
    - How were participants assigned to conditions? Was it random? Did they complete the survey on their personal electronic device?
  - Did you do anything to the data related to eliminating outliers, using a median split to create groups, or make any other decisions about coding or altering data? Include any information about data preparation in this section.
  - Be brief but the reader should be able to visualize exactly what happened and have enough details to reproduce your study.
  - End with a statement similar to “At the conclusion of the study, researchers thanked and debriefed participants and answered any questions about the study.”
  - If you are writing about an online study, “At the conclusion of the study, participants saw a screen that explained the study, provided contact information for the researchers, and thanked them for their participation.”

## **Results**

- The word “Results” should be bolded and centered but do not use a new page for this section.
- The goal of this section is to report the statistical test, results, and brief interpretation of all your data.
  - When reporting ANOVAs or *t*-tests, state which groups/variable scored higher or lower.
  - When reporting correlations, state whether it was a weak, moderate, or strong correlation and explain what the positive or negative sign means regarding the scores.
    - $r = .01$  to  $.29$  is weak;  $r = .30$  to  $.49$  is moderate;  $r = \geq .50$  is strong
  - You must report what kind of test you used to get each statistic.

- Important rules to follow:
  - Every letter that relates to a statistic must be italicized.
  - Every equal sign needs a space around it.
  - Every mean must be accompanied by a measure of variance like the standard deviation or standard error.
  - Report 2 decimal places for all numbers (e.g., 23.126 would be 23.13).
  - For  $p$ -values, use three decimal places if necessary; don't round  $p$ -values.
  - Provide the exact  $p$ -value (e.g.,  $p = .014$ ); don't say  $p < .01$  or  $p > .05$ .
  - If SPSS tells you that the significance value is .000 then write  $p < .001$ .
- Do not get creative – report each test and finding exactly the same; results are hard enough to comprehend so don't make it harder by reporting the findings in different formats. Use parallel sentence structure so that each sentence reads the same.
- Organize your Results so they don't appear like random sentences tossed together.
  - Ideas to consider – organize them in order of your predictions or organize topically (e.g., put personality variables in one paragraph and demographic variables in one paragraph).
  - Usually, authors discuss their significant findings before non-significant findings, but use critical thinking to logically group your tests or variables in an organized manner.
  - Discuss results that were significant and results that were not significant b/c they are both important but be sure you clarify that it is or is not significant. You can't just omit the non-significant findings, especially if they were part of your predictions.
- Do not say “insignificant” – say non-significant or not significant.
  - Only  $p$ -values less than .05 are significant.
- Do not talk about how the data relates to your hypotheses; you will do this type of interpretation in the first paragraph of your Discussion section.
- Pay close attention to the examples below, your results must be formatted the same.
- For  $t$ -tests, you will report –  $t(31) = 7.86, p < .001$ . The  $t$ -value is 7.86, the  $p$ -value (significance) is .001, and the degrees of freedom are 31 (independent samples =  $n - 2$ ; one sample =  $n - 1$ ; paired samples =  $n - 1$ )
  - “An independent samples  $t$ -test indicated that women ( $M = 15.23, SD = 4.14$ ) spent significantly more time on social media each week than men ( $M = 12.89, SD = 3.10$ ),  $t(31) = 7.86, p < .001$ .”
  - If a  $t$ -test is not significant, it is telling you there is no significant difference between the scores. For examples, “An independent samples  $t$ -test indicated that students ( $M = 6.23, SD = 1.89$ ) did not report significantly different anxiety scores compared to parents ( $M = 6.54, SD = 2.09$ ),  $t(789) = 1.04, p = .15$ .”
- For correlations, you will report –  $r(304) = .13, p = .02$ . The  $r$ -value is .13, the  $p$ -value (significance) is .02, and the degrees of freedom are 304 ( $df = n - 2$ )
  - A significant, weak, positive correlation between income and overall health indicated those who reported higher income reported being healthier,  $r(304) = .13, p = .02$ .
  - If a correlation is non-significant, it's telling you that we don't have confidence that the two variables are significantly related. For example, “A non-significant correlation between income and depression scores indicated no relationship between these variables,  $r(521) = .02, p = .15$ .” You wouldn't call it positive or negative or mention the strength if it is not significant.
- For ANOVAs, you will report –  $F(1, 42) = 5.21, p = .01$ . The  $F$ -value is 5.21, the  $p$ -value is .01, and the degrees of freedom are 1 and 42.
  - Degrees of freedom (1, 42)
    - 1 = Use the  $df$  that SPSS gives you for each variable for the first number you report (i.e., it's the number of levels of each IV minus 1) – look in the  $df$  column and then find the associated  $df$  for each variable. A variable with 2 levels would have a  $df$  of 1; a variable with 3 levels would have a  $df$  of 2.
    - 42 = Use the error  $df$  that SPSS gives you for the second number you report (i.e., it's usually the number of the number of participants minus number of independent groups in your design); this between subjects 2 x 2 design would have had 4 groups ( $2 \times 2 = 4$ ) and 46 participants ( $46 - 4 = 42$ )
  - The  $F$ -value and the significance value will be presented in SPSS.
- You will report a  $F$ -value for each main effect and an overall  $F$ -value for the interaction
  - To determine if scores differed depending on participants' level of distraction or note taking, researchers conducted a between-subjects 2 x 2 (Distraction [used phone, no phone] x Note Taking [took notes, no notes]) ANOVA. A significant main effect for note taking indicated that participants who took notes ( $M = 3.31, SD = .99$ ) scored higher than participants who did not take notes ( $M = 1.65, SD = .92$ ),  $F(1, 42) = 5.21, p = .01$ . There was not a significant main effect for distractions because participants who used their phone ( $M = 1.96, SD = 1.11$ ) did not score significantly lower than participants who did not use their cell phones ( $M = 2.81, SD = 1.20$ ),  $F(1, 42) = 1.91, p = .13$ . Additionally, there was a

significant interaction between distractions and note taking, which indicated the effect of distractions on quiz scores depended on note taking,  $F(1, 42) = 5.02, p = .02$  (see Figure 1). To decompose this interaction, a simple effects analysis showed that among participants who used their cell phones, those who did not take notes ( $M = 1.82, SD = .98$ ) scored significantly lower than those who took notes ( $M = 2.91, SD = .84$ ),  $F(1, 42) = 4.21, p = .03$ . Among those who did not use their phones, there was no difference between those who did not take notes ( $M = 2.99, SD = .81$ ) compared to those who did take notes ( $M = 3.05, SD = .76$ ),  $F(1, 42) = 2.76, p = .15$ .

### Discussion

- The word “Discussion” should be bolded and centered but do not use a new page for this section
- The first paragraph should restate your hypotheses, summarize your results, and explain whether your results support your hypotheses.
  - This section should be the easy-to-read version of your results sections. When writing this section, a family member should be able to understand the results of your study with little or no statistical training.
  - The only statistical words you really need to include are “significant” or “non-significant” when explaining how the results either supported or refuted your prediction.
  - Do not use numbers when explaining your results; there are no stats in this section.
  - This section should be organized either topically or based on the order of your predictions in the Introduction.
  - You should concisely revisit your predictions while explaining your results. Do not copy and paste your original predictions into this section.
    - “As predicted, participants who took notes had higher significantly higher recall than participants who did not take notes during the learning phase of the study. Contrary to the prediction that participants who used their phones during the learning phase would have lower scores than those who did not use their phones, data suggested no significant difference in recall between these two groups.”
- The next few paragraphs should relate your findings to previous research.
  - You should cite many of the sources from your Introduction section, especially the ones where you reported exact findings from their studies. For class papers, you should cite all studies from the Intro.
  - Did your data support or add additional support to previous findings? Did your data refute or contradict previous findings?
  - Do not ever use the word prove or disprove.
  - Use suggestive language because science is constantly changing and is affected by many different factors
    - Example: “Our data supported the idea that taking notes is important for retention (insert citation for other research on this topic). Interestingly, our data suggested that using cell phones only lowered scores of participants who did not take notes, which may indicate future researchers should examine how distractions affect retention using a variety of settings and by varying the difficulty of material to be learned.”
    - Use the words “may”, “suggested”, “indicated”, “was consistent/inconsistent”, “provided support for”, etc. when talking about how your data fits with peer-reviewed literature; you can’t be sure of anything until you do additional research.
  - You need to discuss similarities and differences between your project and their research to provide critical analysis.
    - What differed between your study and theirs? Think about the sample (e.g., age, size, gender, race/ethnicity), think about the scales and how constructs were measured, think about online versus in-person administration, think about whether the variables would be different in current society versus studies done much earlier. Basically, you must demonstrate critical thinking about how your study compares to their study instead of just saying “We found this, but they found that.”
  - This section should have some organization to it. Ideas to consider – organize it topically by variables, organize it by significant and non-significant findings.
  - You can combine the first paragraph (i.e., recapping your results and revisiting your predictions) and integrate it to the review previous research. Some writers find this system preferable because you discuss each prediction/finding then discuss how it relates to the previous research. You should still provide clear organization if you choose this system.
- The next paragraph or two should discuss limitations/flaws of your study and provide suggestions for how to strengthen future research.
  - Critically think about why you did not replicate previous research. Provide possible explanations if you failed to replicate previous research.
  - Critically think about ways that future research could improve on your study.
  - You must point out a limitation, explain why it’s important and could affect your study, and suggest a way to address this limitation in future research

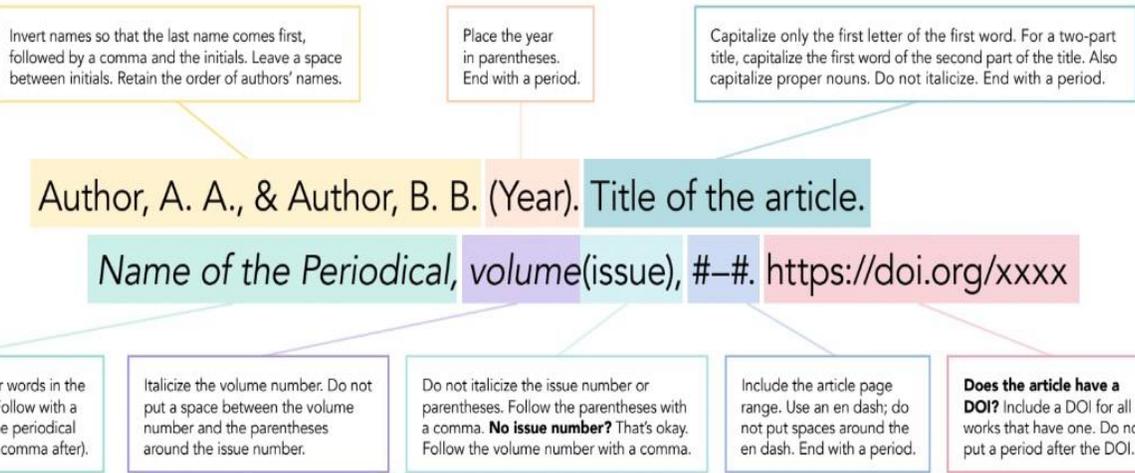
- It's not enough to say, "Our study only used college students, so future researchers should examine other samples." Why is this limitation important? How does it affect the interpretation of your results? What samples should future researchers test? How can future research overcome this flaw?
  - Being critical is not as important as offering useful suggestions.
- Be sure to demonstrate higher-level thinking and critical analysis in your limitations. Consider issues related to statistical, construct, internal, and external validity when writing this section.
- The final paragraph should tie everything together and leave the reader with a take-home message.
  - Restate the important findings of your study.
  - Explain how these findings can help future researchers and the general population.
  - Answer the question of why anyone should care about your data – give a big picture message.

**References (see link for examples)** <https://apastyle.apa.org/style-grammar-guidelines/references>

- The word "References" should be centered and bolded; use a new page for this section. – 7<sup>th</sup> ed.
- References should be arranged in alphabetical order – do not re-arrange the order of the authors within a publication.
- References should be double-spaced and have a hanging indent with a .5" tab.
- Capitalize:
  - The first letter of the author's last name and their initial(s)
  - The first word in the title of the journal article, book chapter title, or book title – 7<sup>th</sup> ed.
  - The first word after a colon
  - Every major word in the title of the journal
  - All proper nouns
- Italicize:
  - The name of the journal or name of the book
  - The volume of the journal after the title of the journal
  - The title of a video, dissertation title, website (not social media), magazine, newspaper
- PsycINFO will give you an APA citation (look to the right after you click on an article and find the icon that looks like a note card), but these citations are usually not formatted 100% correctly.
- Google information or consult the APA manual for unusual references.
- Remove all hyperlinks in the References page.
- APA formatting requires you include a doi # (digital object identifier) for each reference; if no doi is available leave this section blank – 7<sup>th</sup> ed.
- If you have 20 or fewer authors, write out all authors' names in the reference page; if you have 21 or more, write out the first 20 authors, then use an ellipses (i.e., ...), omit the other authors, and write the final authors name. – 7<sup>th</sup> ed.
- To cite the APA Dictionary:  
American Psychological Association (n.d.) APA dictionary of psychology. Retrieved January 06, 2020 (insert your date), from

<https://dictionary.apa.org/>

**Journal Article**



**Book**



**Chapter in an Edited Book**



SOURCE: American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.). <https://doi.org/10.1037/0000165-000>  
 CREDIT: MELANIE LAW, FLORIDA SOUTHERN COLLEGE

**Tables** <https://apastyle.apa.org/style-grammar-guidelines/tables-figures/>

- Each table should be on a new page; do not put two tables on one page.
- Make sure title is descriptive about what the table is displaying for the reader.
- Tables are only for data that were not included in your Results section.
- Only include horizontal lines, never include vertical lines.
- You must re-type the data, copying and pasting from SPSS will not work – make sure it is the same font as your paper.
- Must be numbered in order and include a descriptive title
  - “Table 1” is bolded and appears flush left on the first line of the page. – 7<sup>th</sup> ed.
  - The actual title is italicized and appears on the next line; all major words are capitalized.
- Must be referred to in your paper
  - “As shown in Table 1,....” or at the end of the sentence “...(see Table 1).”
  - Label them in the order you discuss them in the paper. Table 1 would be mentioned first before Table 2 in the paper.

**Figures** <https://apastyle.apa.org/style-grammar-guidelines/tables-figures/>

- See APA manual, example papers, and internet for what your graph should look like.
- Each figure should be on a new page; do not put two figures on one page.
- Make sure all axes are clearly and accurately labeled and in the same font as your paper.
- Preferably presented in black and gray (color costs more to print in a journal)
- Must be numbered in order and include a descriptive title.
  - “Figure 1” is bolded and appears flush left on the first line of the page – 7<sup>th</sup> ed.
  - The title should be italicized and appears on the next line; all major words are capitalized. – 7<sup>th</sup> ed.
  - Under the figure use a note at the bottom to explain what the graph is showing. Ideally, you would interpret the main take-home message of the graph or any information they would need to understand what you are showing them. Is it a positive or negative correlation? What is significant? The word “Note” should be flush left with a period after it. You can type this information as double-spaced sentences.
- Must be referred to in your paper
  - “As shown in Figure 1,....” or at the end of the sentence “...(see Figure 1).”
  - Label them in the order you discuss them in the paper. Figure 1 would be mentioned first before Figure 2 in the paper.
- If you show a scatterplot for correlations, add a line of best fit so the reader can see the direction of the correlation.
- If you use bar or line graphs for ANOVAs or *t*-tests,
  - Include standard error bars for each bar or line (you will need to type in the exact standard error values into Excel that SPSS gives you for your graph - Google how to include custom standard error bars for your specific version of Excel).
  - If you have a legend to explain the color of the bars, it should be centered on the right side of the graph.

**Appendix**

- If you have one appendix, center the word “Appendix” at the top of a new page and bold it. If you have more than one, you should label them as Appendix A, B, etc.
- The appendix must be referenced in your paper (usually in the Method section).
- Use this section to include any stimuli, images, new scales you created, or anything that would be necessary for replication of your study.

**Citations within Your Paper)** <https://apastyle.apa.org/style-grammar-guidelines/citations>

- Only include the authors’ last names and the year it was published.
  - Do not include their first name or initials, do not include the journal title, do not include the school – nothing but last names and year.
- You need to cite everything that is not your own idea.
  - Cite definitions - if you did not create the knowledge, then cite the person who did.
  - Cite findings - if you are referring to a “fact” derived from research, then you need to cite the researchers.
  - Cite ideas or suggestions that are not yours.
  - Cite measures you use in the Method section.
- Within your paper, follow these rules:
  - If you have one or two authors, you will always write out both last names, use a comma, then and add the year.
  - If you have three or more authors, write out last name of the first author followed by et al., comma, then the year. – 7<sup>th</sup> ed.

- Note that the word “et” is Latin for “and” and does not have a period after it; “al.” is an abbreviation for “alia” which means “others” and does have a period after it.
- If you include the citation at the end of the sentence (i.e., parenthetical citation), it should look like this:
  - “...social media users (Andreassen et al., 2017)”, “...reflective thought (Annisette & Lafreniere, 2016)”
  - If include the citation in parentheses, use the “&” sign for the word “and”.
  - These usually go at the end of the sentence, but there are rare exceptions to this rule.
- If you use the citation within the actual sentence (i.e., a narrative citation) it should look like this:
  - “Jones and Feinberg (2006) found...”, “Smith et al. (2015) investigated...”
  - If included in the sentence, spell out the word “and”.
- Try to mainly use parenthetical at the end of sentence instead of narrative citations. Why?
  - Because you should focus on the findings not who did the research.
  - Focus on research and findings instead of people.
  - It’s monotonous to read a whole paper filled with “So and So (year) did this, then Such and Such did this (year)...”.
- See APA Manual when you have similar author names or multiple publications with same authors and dates (section 8.18-20).
- If you have multiple studies in a parenthesis at the end of the sentence, put studies in alphabetical order based on the first author’s last name – do not ever rearrange the order of the authors’ names within a study – see example paragraph below.
- All references in your paper must be in your reference section and vice versa.
- If you say “Studies indicated that blah blah affects blah blah.” then you must include at least two citations because the word “studies” is plural – you can’t talk about previous research without citing it. The reader should easily be able to go and find your sources for such claims. You cannot say “Numerous studies have investigated when children form racial bias.” without adding numerous citations.
- When to cite a study:
  - The overall goal is that every piece of information/fact in your paper can be sourced back to the original authors.
  - Cite when study is first mentioned – beginning of most paragraphs
    - When you start talking about the research, you need to add a citation to that sentence.
  - If the study is the only thing described in paragraph – do not cite again until the final sentence
    - Start and end the paragraph with the citation so your reader knows the paragraph refers solely to this research.
    - There is no need to cite every sentence if it’s clear that the paragraph is talking about the same source.
  - If other studies are in the paragraph – cite each study when you talk about it to make it clear to the reader which study you are referring to within the sentence. A reader should be able to easily find the study you are talking about at any point if they have additional questions or want more details.
  - If the same study carries over to next paragraph, then cite it again in the new paragraph.
- Example of scientific writing and how to cite:
  - “It is commonly accepted that racial bias, as measured by explicit (i.e., verbal or written responses) tasks, typically emerges by ages 3 to 5, with bias soundly in place by age 6 to 7, and then declines in many children after age 7 (Aboud, 1988; Bar-Tal, 1996; Doyle & Aboud, 1995; Doyle et al., 1988; Jackson, 2011; Katz et al., 1975; Williams et al., 1975). The first established assessment of racial bias in children, the Preschool Racial Attitude Measure II, required children to decide whether adjectives like “bad”, “good”, or “nice” applied to a White child or a Black child (Williams et al., 1975). To circumvent the forced-choice nature of these tasks, other similar measures such as the Multi-Response Racial Attitude Scale allowed children to assign traits to either child or both children (Doyle & Aboud, 1995; Doyle et al., 1988). A different measure, designed to disentangle personal beliefs from societal knowledge, asked children to indicate what most people would say about an ingroup or outgroup member, and then indicate what they personally think about an ingroup or outgroup member (Augoustinos & Rosewarne, 2001). Based on the disparate findings reported in these studies, it is important to examine the type of task, the demands of the task, what type of images are used (i.e., photographs or drawings of either adults or children) to clearly understand the onset of racial bias.”
  - The next paragraphs after this paragraph discuss the specific findings of each type of racial bias task and further clarify the specific findings of each study. This paragraph is an example of setting up the idea that different tasks measure different types of bias. The first sentence has lots of citations because it makes a huge claim that has been supported by all the studies cited. Each sentence after the opening sentence includes specific citations that would allow a reader to find and verify each claim and learn more about the specific task. The concluding sentence wraps it all up and sets the stage for the next paragraph that explains more about the first task in the Williams et al. (1975) publication.
- Try to avoid using direct quotes, but if you do follow these steps:
  - Put the verbatim text in quotation marks
  - Cite at beginning or end of quote and add page numbers:

- Results suggested “a significant linear decline in mean levels of trait reflectiveness and openness to experience among first year introductory psychology students over the previous four years” (Annissette & Lafreniere, 2016, p. 155).
- Block indent quotes of 40 or more exact words – there is no reason to do this technique in scientific writing b/c you should rephrase the passage in your own words

### ***Reading Journal Articles***

- The goal is to find articles that are similar to each other but address different aspects of your topic.
- When reading an article look at the abstract, the last paragraph of the Introduction, and the first paragraph on the Discussion section to get a quick overview of the purpose and results from the study.
- Once you find a great article, look at the references in the article and look at the link in PsycINFO that says “time cited in the database” to find articles that have referenced this article.
- If, after reading these sections, the article seems like a great fit, then start reading it from the beginning and create an outline to guide your Introduction section.
- Take active notes to compose an outline each time you read a good article.
- Everything you include in your outline should be in your own words so that you can just retype your notes into sentences in your paper; if you need to use the author’s words be sure to put quote marks around it and make it clear to yourself that it’s a direct quote from the article (then rephrase this information later when you have had time to think about it)
- Good outlines will make writing your paper much easier because you can just take your notes and turn them into cohesive sentences and paragraphs.
- When making an outline:
  - Read the Introduction for the background info about why they conducted the research
    - Be on the lookout for good references that you may want to include in your paper
    - Note whether they include an operational definition or explain the construct well – you may want to use their definitions in your paper (but you will rephrase and cite these definitions)
    - Note important information that may relate to or help your project
  - Read the Method for the basics of why they did what they did
    - Who were the participants? How did they conduct the study? What types of groups did they use?
    - See if there are any good variables or measures that could be helpful for your project
    - Pay attention to the construct validity of their variables – did they measure their constructs well?
  - Read the Results section to see what tests they used – pay attention more to their words than their numbers
    - Did they find significant correlations? Did they find significant differences between groups? Did they find a significant interaction?
    - Focus on the findings that are relevant to your project and ensure you understand them.
    - If you are not clear on this information, skip down to the Discussion to see how they explained their results and then try to integrate their interpretation back to the numbers to help remind yourself about what the stats mean.
  - Read the Discussion section to see what they found, what it means, limitations of the study, and directions for future research
    - The first paragraph or two should rephrase their results in words instead of numbers.
    - Did their results confirm or refute their hypothesis and previous research?
    - What are some limitations and can you use these ideas to help form your study?
    - What is the “big picture” take home from their study and how can this guide your research?

### ***Important Things to Remember about Scientific Writing***

- Science writing is not creative writing, but it should be interesting and engaging. Your goal is to be concise, precise, and “to the point” – cut out all the fluff. Clarity and conveying precise information are the goals.
- Constantly ask yourself the following questions – What is the point of telling the reader this information? Is every sentence as clear and concise as possible? Have I defined and explained the information that is necessary for my reader to understand what they need to know about my study? Have I eliminated any unnecessary words or phrases to improve clarity?
- Scientific writing is not a personal essay and should be objective and remain in the 3<sup>rd</sup> person. Work to remove bias and subjectivity when writing.

### **Writing and Editing Your Paper**

- You must edit your paper multiple times – there is absolutely no way to write a great paper in one sitting. Trust me on this one. You will need to edit multiple times.
- Give yourself time. Do not start your paper the night before or day it is due. Research and personal experience support the idea that you should write in smaller chunks across time.
- Do each one of these steps then take a break from the paper. Fresh brains produce better writing.
- When you get to the 3<sup>rd</sup> and 4<sup>th</sup> rounds of editing, print out your paper. Typos are often easier to catch in print than on a screen.
- Pre-writing
  - Make a rough draft outline of what you need to include. This step is vital for the Introduction. The outline doesn't have to be formal or have Roman numerals, but you need a blueprint of how you will construct this section.
  - Think about how you will structure your ideas and building your story – let this outline guide you as you write to add cohesiveness and flow to your writing.
  - The better outline you make, the easier and better your paper will be. How will you arrange the information? What information should you start with to grab the reader and open the topic? How will you put your puzzle pieces (i.e., individual articles and concepts together) to create a cohesive and clear Introduction section?
- 1<sup>st</sup> round of writing
  - Word vomit on the page. Get all the ideas and information typed up into a document. Do not stare at a blank screen, just start typing what you know.
  - Copy, cut, paste are your friends. In the modern age of writing, you can move and change anything.
  - Don't worry about formatting here; this step is just to get you started on writing. When you go to open up the document the next day, it's much more encouraging to see words instead of another blank screen.
- 2<sup>nd</sup> round of writing
  - Go back through and clean up your word vomit. Check for/add topic sentences that introduce and transition your ideas. Check for concluding sentences and make sure your ideas flow well.
  - Read critically to see if you left out any important information that will help your reader understand your study/ideas.
  - Make sure each section has accurate and comprehensive details.
- 3<sup>rd</sup> round of writing
  - Check for grammar, verb tense, the use of active voice, subject-verb agreement, typos, mechanics of English, and double check the numbers in your Results section.
  - Check any rubrics provided by the instructor to make sure you have all the required information.
- 4<sup>th</sup> round of writing
  - APA checking – make sure that your paper is APA formatted using all the rules and guidelines in this document.
- 5<sup>th</sup> round of writing
  - First, start at the end of your paper and read each sentence starting with the last sentence first. This process will help you find any last minute typos b/c you won't be "expecting" the sentence (i.e., your brain will be doing more bottom up processing instead of top down processing).
  - Second, read your paper from the beginning and ensure that it's as awesome as you can possible make it.