ENG103 Research Writing Techniques

241 Final Exam Study Guide

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Important Note:

In addition to this study guide, you must also review and consult the course's lesson slides in preparation for the Final Exam.

Final Exam Structure

The Final Exam comprises four sections:

1) An annotated bibliography. Value 10 points.

2) A research scenario question; you will have to write a response paragraph to a research scenario. This question will be focused on research ethics. Value 10 points.

3) 5 Short answer questions. Value 10 points.

4) 10 Multiple choice questions. Value 10 points.

The Definition of Research & Research in the Social Sciences

Research can be defined as an endeavor that adheres to a structure to acquire new knowledge about the world or to test existing assumptions. Moreover, this endeavor involves forming a question, a methodology to address it and ultimately an answer that has a basis that can be scrutinized.

Research in the Social Sciences can be defined as investigations that focus on the behavior of humans and their subjective interactions with the world, rather than the study of objective and consistent variables such as the elements that make up human anatomy and affect it.

A study into coffee culture's impact on social cohesion in Riyadh is a good example of research in the social sciences. While a study into the effects of coffee on human cognition is more related to the Physical Sciences.

Writing an Annotation

An ordinary bibliography is a list of the sources that have been consulted and or reviewed to write an essay. However, an annotated bibliography includes more detail because it presents a summary for each cited text. Consequently, an annotation for each text should highlight the main subject of focus, research methods and the author's main argument (i.e., findings/conclusions).

An annotated Bibliography entry paragraph (an annotation) should:

1. include the end reference information
2. explain the article's research focus
3. describe the research method/methods used
4. highlight major findings/results and conclusions
5. include at least one direct in-text quotation that is appropriately integrated and referenced according to the APA style.

Writing an Annotation

An example of an annotation:

Chu, H. (2014). Potential Negative Effects of Mobile Learning on Students' Learning Achievement and Cognitive Load—A Format Assessment Perspective. *Journal of Educational Technology & Society, 17*(1), 332–344. http://www.jstor.org/stable/jeductechsoci.17.1.332

The article's main research focus is to investigate if the structured use of personal devices such as mobile phones and portable computers for education (referred to as mobile learning) has negative effects on student learning. This focus also encapsulates a study to determine if mobile learning has a counterproductive effect on students' cognitive load, which relates to the way "… cognitive architecture deals with learning objects during the learning process or when performing a particular task" (Chu, 2013, p. 333). The research method is quantitative in nature and used an experimental design; in that, the researchers used two fifth-grade sections studying an indigenous culture course. The experimental group was assisted in their learning with mobile devices while the control group was limited to the use of traditional methods. In terms of the results, the experiment found that the control group performed better than the experimental group. Also, the results indicated that the cognitive load of the students in the experimental group was higher than the control, "… which might have led to negative effects on their learning achievements" (Chu, 2014, p. 340).

Quantitative, Qualitative & Mixed Research Approaches

In essence, **Quantitative** research approaches collect structured data that is numerical in nature; thus, this approach has a degree of objectivity. For example, the use of a structured survey to undertake a study to determine the percentage of minority groups that are racially assaulted in the UK would be an example of quantitative research.

In essence, **Qualitative research** approaches focus more on individual subjective accounts and aim to collect data often missed by Quantitative research methods. For example, the use of unstructured interviews to undertake a study to determine the long-term effects of racial assaults on victims would be an example of Qualitative research.

A **mixed research** approach combines quantitative and qualitative approaches to produce more robust results. For example, the use of a structured survey as well as unstructured interviews to undertake a study to determine the frequency of racial assaults and their causes would be an example of a mixed research method. The quantitative based survey would inform us of frequency of racial assaults while the qualitative based interviews would tell us about the causes of the assaults.

Experimental & Control Groups

The Experimental group: is the group that receives the experimental procedure, which usually involves manipulation with the independent variable. For example, in an experiment to see how coffee affects exam performance, the group that is given coffee to drink before the exam is the experimental group.

The Control Group: is the group that does not receive the experimental procedure or test sample. For example, in an experiment to see how coffee affects exam performance, the group that is **NOT** given coffee to drink before the exam is the control group.

Independent, Dependent & Extraneous Variables

The **independent variable** is the factor that is changed or controlled by the researcher in a study. It is the cause or reason for a specific outcome. For example, in an experiment to determine how a new design of car tire improves track times, the new design of car tires are the independent variable.

The **dependent variable** is the factor that the researcher measures to determine the effect of the independent variable. For example, in an experiment to determine how a new design of car tire improves track times, the track times are the dependent variable.

The **extraneous variable** is the factor that is NOT changed or controlled by the researcher in a study but affects the dependent variable. For example, in an experiment to determine how a new design of car tire improves track times, air temperature is an extraneous variable because it will affect the dependent variable, track times.

Generalizability & Transferability

In essence, **generalizability** refers to the ability to apply research conclusions, which were based on a sample group, to the population (relevant people outside of the actual research), i.e., to make a generalization from a limited study. For example, researchers concluded that their sample group of 30 student participants in their study increased their coffee intake leading up to an exam. Generalizability, would be the ability to apply the findings of this research to the population (all students), and say students increase their coffee intake leading up to an exam.

In essence, **transferability** refers to the applicability of research findings to other contexts, which are different from the original research context. Consequently, transferability is important because it refers to the ability to apply research findings from one context to another. An example of transferability would be applying the findings of research undertaken to determine how uniforms improve social cohesion among university students to office workers.

Paraphrasing with the APA Referencing Style

According to the APA referencing style there are two forms of references for 'paraphrasing'. The first is **'Signal phrase**', and the second is the **'Parenthetical note'**.

Howard (2019) states that Signal phrases "include the author's name (often just the surname) and an appropriate verb in your sentence, and place the date of publication, in parentheses, immediately following the author's name" (p. 220).

These verbs include the following: argues, asserts, states, contends, suggests and explains.

An example of a Signal phrase is as follows:

Davidson (2022) argues that students are adversely affected if they drink coffee before going to sleep.

Regarding **Parenthetical notes**, Howard (2019) asserts that they "in parentheses, provide the author's surname, followed by a comma and the year in which the source was published. Place the note immediately after the borrowed material" (p. 220).

An example of a Parenthetical note is as follows:

Research into the effects of coffee on human cognition indicates that students are adversely affected if they drink coffee before going to sleep (Davidson, 2022).

The main differences between a signal phrase and a parenthetical note is that a signal phrase begins with the author's name and year of publication in parentheses and uses an appropriate verb to introduce the idea, while a parenthetical note includes the author's name and year of publication in parentheses immediately after the idea is presented.

Direct quoting with the APA referencing Style

When using direct quotes, the components are the same as paraphrasing, but with the addition of "double quotation marks" and the page number, which is signified with the letter p..

An example of a direct qoute when it is comes after the author's name is as follows:

Algamdi (2020) contends that "students who study longer typically achieve higher grades" (p. 38).

An example of a direct quote when the author's name is not mentioned first is as follows:

It is better for students to increase their study time because research findings suggests that "students who study longer typically achieve higher grades" (Algamdi, 2020, p. 38).

Multiple Authors

According to the APA style there are unique rules when dealing with texts that have two or more authors:

The American Psychological Association (2020) states that "for a work with one or two authors, include the author name(s) in every citation" (p.266).

For example: Carlson and Rogan (2010) argue that women have more employment opportunities in industries that involve creativity.

The American Psychological Association (2020) states that "for a work with three or more authors, include the name of only the first author plus "et al." in every citation, including the first citation…" (2020, p.266).

For example: Trotter et al. (1988) argue that Peckham has more of an influence on international trade than New York and Paris combined.

Multiple Authors

Also, the APA style specifics when to use "and" or "&": "in parenthetical citations, use an ampersand (&) between names for a work with two authors…in narrative citations, spell out the word "and"" (American Psychological Association, 2020, p.266).

An example of a parenthetical citation:

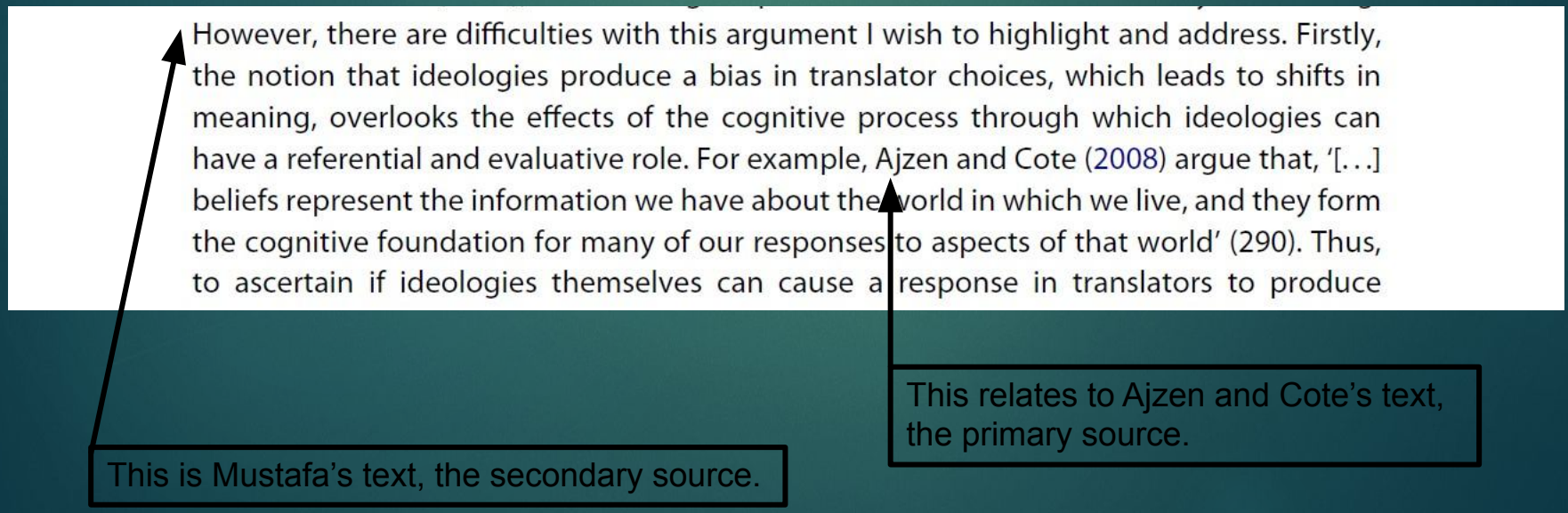
University graduates have more employment opportunities in industries that heavily rely on digital technologies (Carlson **&** Rogan, 2010).

An example of a narrative citation (a signal phrase):

Carlson **and** Rogan (2010) argue that University graduates have more employment opportunities in industries that heavily rely on digital technologies .

“as cited in”

Occasionally, we find good quotes (primary text) and information cited by another text (secondary text) we are reading. The quotes and information are referred to as the primary source while the text that cites them as the secondary source. For example, we are reading an article written by Mustafa (2020) and find valuable information he cited from Ajzen and Cote (2008).



“as cited in”

In such a situation when we want to cite the primary source, we must follow specific APA rules: “in the text, identify the primary source and then write "as cited in" the secondary source that you used. If the year of publication of the primary source is known, also include it in the text” (American Psychological Association, 2020, p. 258). Accordingly, using the primary source Mustafa cited would be as follows:

Beliefs are important to understand the world. For example, Ajzen and Cote (2008) contend that “. . . beliefs represent the information we have about the world in which we live, and they form the cognitive foundation for many of our responses to aspects of that world” (as cited in Mustafa, 2020, p.5).

Note: the page number is where the quote appears in Mustafa (2020). Also, only Mustafa’s text should appear in the reference list.

In essence, when we want to reference a quote found in a secondary text, we should use **as cited in** to indicate we did not extract the quote directly from the primary source but rather sourced in from a secondary source.

Preparing an APA-Style Reference List/ End Reference

The reference list is written on a separate page and uses the heading: **Reference List or References**

The references are listed in alphabetical order.

For online articles with one author the following format is used:

In italics

Author's surname, Initial(s). (Year of publication). Article title. *Journal Title*, *vol* (no)., pages. DOI

Davidson, B. (2020). Coffee and human cognition. *Psychology and Nutrition, 12*(3), 89-103. doi:10.1016/j.cognition.2011.07.011

For printed books with one author the following format is used:

In italics

Author's surname, Initial(s). (Year of publication). *Title: Subtitle*. Publisher.

Algamdi, S. (2020). *Modern pedological trends: time matters*. PSU Publications

Preparing an APA-Style Reference List/End Reference

According to the American Psychological Association (2020), when there are two or more authors:

- Invert all individual authors' names, providing the surname first, followed by a comma and the initials: Author, A. A.
- Use a comma to separate an author's initials from additional author names, even when there are only two authors; use an ampersand (&) before the final author's name: Author, A. A., & Author, B. B.
- Do not use a comma to separate two group authors: American Psychological Association & National Institutes of Health.
- Use a serial comma before the ampersand (&) with three or more authors (p. 286).

For example:

Carlson, R., & Rogan, S. (2010). Culturally enforced job roles. *Employment and Ideology, 2*(1), 78-104. doi:10.1016/j.ideology.2011.07.011

Trotter, R., Pearce, M., & Tulseret, D. (1988). The importance of independent traders to global economies. *Employment and Ideology, 12*(3), 87-112. doi:10.3019/j.ideology.6011.08.011

Participant-oriented Research

Participant-oriented research is the gathering of data from people rather than the things they produce or the things that affect them.

In addition, participant-oriented research can take the form of quantitative research (e.g., large scale structured surveys) or qualitative research (e.g., unstructured interviews).

Moreover, participant-oriented research can be used for *inductive research* as a means to produce hypotheses or it can be used for *deductive research* to test existing hypotheses.

Representative Samples & Sampling errors

In everyday life we rely on samples to make decisions about aggregates. Similarly, when we need to reach decisions about a research population, we can conduct participant-oriented research through which we only need to test a sample of participants.

Ruane (2005) suggests that "samples, then, offer a practical solution to the daunting task of studying entire populations. We can use samples to "stand in" for a larger population. In this sense, samples can be very efficient devices – they allow us to look at the "few" in order to know about the many" (p. 105).

However, sample groups that are not representative of the population under investigation can lead to sampling errors. Leavy (2017) suggests that "in survey research it is important to consider sampling error when you draw your sample. Sampling error occurs when you have a biased sample" (p. 110).

Individuals in populations are typically **heterogenous** (not the same as each other). For example, a university population comprises of males, females, and people of different economic and cultural backgrounds. It is very rare to find individuals in populations that are **homogeneous** (the same as each other).

Thus, it is important that samples are representative of the population, and to achieve this its is necessary to form a **sample frame** which involves collecting detailed information about the research population.

Surveys

Surveys are a method to collect and analyze standardized information from participants. **Leavy (2017) explains that:**

> Surveys rely on asking people standardized questions that can be analyzed statistically. They allow researchers to collect a breadth of data from large samples and generalize to the larger population from which the sample was drawn (p. 101).

There are two main types of survey design, which are cross-sectional and longitudinal

Cross-sectional: "Cross-sectional designs seek information from a sample at one point in time" (Leavy, 2017, p.101). For example, a survey to collect and analyze data in relation to how a population rate the taste of a new diet food product.

Longitudinal: "Longitudinal designs occur at multiple times in order to measure change over time" (Leavy, 2017, p. 101). For example, a survey to collect and analyze data in relation to how a new diet food product impacts people's health over a ten-year period.

Questionnaires

As mentioned, surveys involve the collection and analysis of data, but a questionnaire is limited just to the collection phase of data. For example, Leavy (2017) explains that "questionnaires are the primary data collection tool in survey research. A questionnaire is also referred to as the survey instrument" (p.101). Also, Matthews and Ross (2010) define a questionnaire as follows:

> (1) a list of questions each with a range of answers; (2) a format that enables standardized, relatively structured, data to be gathered about each of a (usually) large number of cases (cited in Saldanha and O'Brien 2014 pg. 151).

A questionnaire has several advantages over interviews:

- A questionnaire can reach many participants
- The data is easy to collate, especially with forced-choice questions
- The data results are, theoretically, easy to reproduce

However, a questionnaire has several inherent disadvantages:

- Constrained responses (sometimes forced-choice questions do not tell the full story)
- Finding appropriate participants
- Low response rate

Question Types

There are two main types of questions that can be used in a survey:

1) Open-ended questions: the participant is free to answer the question in anyway. This method is aligned with qualitative research, and the advantage of this approach is that it can yield unexpected responses. The disadvantage is that the answers are difficult to process in a quantitative study as the data will not be structured.

2) Forced-choice: the participant is forced to answer the question in accordance with a limited number of potential answers. The advantage of this approach is that it can yield structured information that is easy to process in a quantitative study. The disadvantage is that it may miss unexpected responses (unknown unknowns).

Question Types

Likert Scale Questions are a category of forced-choice questions. The question is a statement, and the multiple-choice answers relate to levels of agreement (e.g., strongly agree, agree, neutral, disagree, and strongly disagree). In this regard, Saldanha and O'Brien (2014) suggest that:

> A very common device in questionnaires is the 'Likert scale', which was developed by the American psychologist Rensis Likert. A Likert scale commonly offers a series of five, seven or nine responses along a continuum of 'strongly agree to strongly disagree'. Some researchers favour an even-numbered scale which, they believe, prevents respondents from conveniently selecting the mid-point on the scale (usually 'neither agree nor disagree' or 'not sure') (pp. 157-58).

Research Ethics
Participant Consent

In general, any research that requires the collection of data from participants through interviews, focus groups and questionnaires requires the consent of the participant. Saldanha and O'Brien (2014) state that: Informed consent is one of the core principles in ethically-designed research. It is the responsibility of the researcher to ensure that participants fully understand what they are consenting to participate in (p. 43).

Obtaining the participants consent is normally obtained from them signing (or agreeing by other means) to a consent form that typically:

- Contains the details of the researcher and their institutional authority
- Contains a statement that the participants involvement is completely voluntary and there is no compulsion
- Outlines the aims of the research
- Outlines the participant's role
- Includes a statement that the participant can withdraw at any point
- Includes a statement with an explanation that the participant's personal details will not be disclosed. This can also include a statement that their personal information will be destroyed and only an alias will be attached to their responses

Research that does not gain the participants' informed consent is an ethical violation of participant consent. However, a potential risk with a consent form that outlines the aims of the research and the participants role in achieving those aims in detail is that it may influence the behavior of the participant and thus invalidate the authenticity of their responses.

Research Ethics
Participant Deception

Deception typically refers to the concealment of the true aim of the research or the true nature of the participants involvement so not to affect their behavior and produce unnatural responses. This can be achieved through the misrepresentation of the research or the omission of key details. In addition, it could be achieved by not informing the participants that they are involved in a research project. For example, collecting data through observing students' behaviors to a stimuli without receiving the consent of the students.

Thus, if data is obtained from participants through deceptive means, it would be an ethical violation through Participant Deception.

Research Ethics
Confidentiality and Anonymity

When conducting participant-based research confidentiality and anonymity are key issues related to research ethics.

> Regarding confidentiality Piper and Simons (2005) explain that: Confidentiality is a principle that allows people not only to talk in confidence, but also to refuse to allow publication of any material that they think might harm them in any way (p. 57).

For example, without the guarantee of confidentiality students would not be willing to explain their true feelings in research interviews designed to assess student satisfaction.

In relation to anonymity Piper and Simons (2005) suggest that "anonymization is a procedure to offer some protection of privacy and confidentiality" (p. 57).

For example, giving participants an alias or a reference number at the first point of contact is a mechanism of anonymization.

In essence, confidentiality refers to the secrecy of participants to the extent their involvement in the research is not disclosed, while anonymity relates to the procedures used to achieve and maintain confidentiality. Thus, if researchers disclose information that identifies a participant this would be an ethical violation of Confidentiality and Anonymity.

Research Ethics
Power Relations

Power relations is an important issue to consider because it can force people to participate in a research project, and it can influence their responses.

For example, Saldanha and O'Brien (2014) state that:

> Participation in a research study should be voluntary and withdrawal without question should be guaranteed. However, as with all aspects of life, power relations can interfere with these aspirations. It is important for the researcher to be aware of such power relations and the impact they might have on participants (p. 45).

Situations where power relations may be a matter of concern:

- A lecturer collecting data from student participants
- A researcher from a powerful culture extracting data from participants who belong to a marginalized culture
- An employer collecting data from their staff participants

Issues in power relations may result in:

- Participants behaving in a manner they think is favorable to the researcher
- Participants feeling they are compelled to participate in the research

Thus, if a researcher uses their position to coerce participants to take part in their research or to respond to a questionnaire in a particular way this would be an ethical violation of Power Relations.

Research Ethics
Harm Avoidance

Research that harms participants is unethical. The harm can be financial, material, physical and emotional and can occur in several research situations. Below are some examples,

A situation where interviews or other forms of data collection are seen to be an act of collusion with an opposed culture could cause participants to face repercussions from their culture merely for taking part. This would be an ethical violation.

A situation where a participant is identified after revealing information such as a complaint against an employer could cause the participant to face financial harm. This would be an ethical violation.

A situation where distressing information is revealed during an interview and triggers the interviewee severe emotional stress is an ethical violation.

A situation where a participant loses university marks in an exam or an assignment directly due to a research experiment is an ethical violation.

Thus, if a researcher through the collection of data from participants causes a participant harm it will be an ethical violation of Harm Avoidance.

Research Ethics
Harm Avoidance

There are a several approaches that help reduce the potential harm a participant can be exposed to. These are as follows:

- Always ensure participants are unidentifiable from the point of collecting data
- Never include data in your report that could lead to the identification of a participant
- When appropriate, paraphrase the participants responses when discussing them in your report
- When possible, aggregate the responses of participants
- Avoid singling out a participant in a manner they can identify it is them you are referring to, if they were to read your research
- Allow the participant to give you feedback related to the manner you have used data collected from them.
- Always ensure to avoid dynamics (e.g., power relations) that may make the participant feel they are obliged to participate or to respond in a particular way.