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Identifying a Research Question and Study Purpose(s)

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Multiple Choice Questions

1. As part of a research study, you are asked to collect sedentary and physical activity levels among university students in Toronto. What type of research problem does this question represent?
 - a) Predictive research
 - b) Explanatory research
 - c) It does not represent a research problem
 - d) Descriptive research
2. In what kind of scientific reasoning approach does theory guide the research questions and hypotheses?
 - a) Observation
 - b) Inductive reasoning
 - c) Deductive reasoning
 - d) Theory application
3. It is hypothesized that students' class attendance will influence performance on exams and that performance will be influenced by physical activity levels. What types of variables are represented (listed in order) by class attendance, performance on exams, and physical activity levels?
 - a) Independent, dependent, moderator
 - b) Dependent, independent, control
 - c) Dependent, independent, mediator
 - d) Independent, dependent, mediator
4. A literature review summarizes current literature based on studies that are relevant and similar. To summarize these papers, your literature review should do which of the following?
 - a) Be exhaustive and include all, if not most, of the relevant papers
 - b) Include papers that are up to date and justify the research topic
 - c) Include papers that are up to date, justify the research problem, and provide complementary and contrasting views
 - d) Be clear, focused and unique

5. What is a mediator variable?
 - a) A variable of interest that cannot be manipulated but may influence the relationship between the independent and dependent variable
 - b) An unmeasured variables that is not controlled for
 - c) A measured variable that may influence results but is not a focus of the study
 - d) A variables that is hypothesized to partially explain the relationship between the independent and dependent variable
6. Which statement below is *false* about the use of theory in research?
 - a) A research theory provides a framework to guide research problems and questions
 - b) Theories can provide foundations for connecting other frameworks
 - c) Theories are verifiable and testable statements
 - d) Research theories are not used to explain research outcomes
7. The central phenomenon is a characteristic of which kind of study design?
 - a) Qualitative
 - b) Quantitative
 - c) Mixed-methods
 - d) Both *a* and *c*
8. ERIC, PsychInfo, and Web of Science are which of the following?
 - a) Computerized databases
 - b) Online search engines
 - c) Used to identify sources for the literature review
 - d) Both *a* and *c*
9. You are completing a mixed methods design, and the qualitative and quantitative portions of the study occur at the same time. What kind of mixed methods design is this?
 - a) Concurrent mixed methods research design
 - b) Qualitative and quantitative mixed methods design
 - c) Sequential mixed methods research design
 - d) None of the above
10. Which of the following is true about the research hypothesis?
 - a) In general, the research hypothesis is also called the alternative hypothesis
 - b) In general, the research hypothesis is the same as the scientific hypothesis
 - c) In general, the research hypothesis is a statement about the strength and the direction of hypothesized effects
 - d) Both *a* and *c*
11. According to Creswell (2014), what is the most important section in the literature review?
 - a) The introduction
 - b) The purpose statement
 - c) The discussion

- d) The hypothesis
12. The research topic is usually identified using which of the following?
- a) Researcher's interest
 - b) Gaps in literature
 - c) Academic background
 - d) Both *a* and *c*
13. Answering the question "What has not been done?" is key when trying to identify which if the following?
- a) Research problem
 - b) A theory
 - c) Research topic
 - d) Hypothesis
14. You are asked to determine the relationship and the direction of the relationship between two variables. What type of research problem is this?
- a) Explanation research problem
 - b) Predictive research problem
 - c) Descriptive research problem
 - d) Cause-and-effect research problem
15. Which type of reasoning approach relies on observations to make predictions about general principles?
- a) Inductive reasoning
 - b) Logical reasoning
 - c) Deductive reasoning
 - d) Descriptive reasoning
16. The treatment variable is also known as what type of variable?
- a) Dependent variable
 - b) The mediator variable
 - c) Independent variable
 - d) The moderator variable
17. What kind of study design typically identifies both a philosophical worldview and research approach in the problem statement?
- a) Qualitative research study
 - b) Quantitative research study
 - c) Mixed methods
 - d) Qualitative and mixed methods
18. Generating a list of key words for your literature review is helpful for which stage of the process?

- a) Identifying sources for the literature
 - b) Identifying a research problem
 - c) Identifying a research topic
 - d) Reading the literature
19. Of the following options, why is reading review papers helpful when completing a literature review?
- a) They provide a summary of what has been done to date on the topic
 - b) They summarize a group of similar relevant studies
 - c) They are a useful tool to help identify future directions and limitations
 - d) All of the above
20. In terms of organizing literature, which tool gives a visual representation of the identified studies?
- a) Literature map
 - b) A histogram
 - c) Annotated bibliography
 - d) Literature diagram
21. Key variables are the main focus in a ____ study, while central phenomenon are the main interest in a ____ study.
- a) Quantitative, qualitative
 - b) Qualitative, quantitative
 - c) All research studies focus on key variables
 - d) All research studies focus on central phenomenon
22. In which part of the literature review should you identify what is and what is not known about the research problem?
- a) The conclusion
 - b) The body
 - c) The introduction
 - d) Purpose statement

True or False Questions

1. Discrepancies in research findings are associated with deductive reasoning approaches.
2. A moderator variable can also be called an effect moderator and can be manipulated.
3. Predictive research problems allow researchers to make claims about cause and effect relationships.

4. Research focusing on a central phenomenon does not focus on specific variables; rather, the focus is on broad inquiry statements.
5. The independent variable is the manipulated variable.
6. Reading discussions and future directions in a research paper are helpful when trying to identify a central phenomenon.
7. Unmeasured variables that are not controlled for are called extraneous variables.
8. Writing a mixed methods purpose statement involves following the guidelines for qualitative and quantitative purpose statements.
9. The hypotheses or research questions are presented within the research statement purpose.
10. The research topic represents the need for the study and describes the context for the study.
11. Qualitative research approaches generally use questions as opposed to hypotheses.
12. A hypothesis can be derived from theory, literature, or speculation.
13. In a quantitative research purpose statement it is not necessary to identify the targeted participants for the study.

Short Answer Questions

1. Define what is meant by the research problem and describe three key characteristics that make up a good research problem.
2. The use of theory in developing a research problem differ depending on whether quantitative or qualitative approaches are used. Describe the difference between the uses of theory in these two research approaches.
3. Define a descriptive problem and give an example of a descriptive research question.
4. Describe two methods to help you organize literature.
5. When completing a literature review, why is it beneficial to be familiar with the existing literature in a topic? State three benefits.
6. Define the hypothesis and the alternative hypothesis.

Long Answer Questions

1. In your research methods course, you are asked to identify a research topic and a related research problem. Discuss tools that will help you choose a research topic and tools to help identify a research problem.
2. Reading and understanding research literature takes time and can be stressful. Discuss five suggestions that Thomas, Nelson, and Silverman (2011) provide for reading the literature.
3. You are asked to develop a quantitative research purpose statement. List five strategies that help in developing an effective purpose statement. (i.e., what information should you be including in a quantitative research purpose statement?)
4. You are asked to complete a literature review. Discuss how you would gain sources for the literature review and discuss the three main parts to a literature review.

Answer Key

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Multiple Choice Questions

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|-------------------------|----------------------|
| 1. d (p. 22) | 12. d (p. 19) |
| 2. c (p. 26) | 13. a (p. 21) |
| 3. d (pp. 31–32) | 14. b (p. 22) |
| 4. c (p. 26) | 15. a (p. 25) |
| 5. d (p. 32) | 16. c (p. 31) |
| 6. d (p. 24) | 17. d (p. 36) |
| 7. d (p. 32) | 18. a (p. 27) |
| 8. d (p. 27) | 19. d (p. 27) |
| 9. a (p. 36) | 20. a (p. 29) |
| 10. d (p. 37–38) | 21. a (p. 30) |
| 11. b (p. 31) | 22. b (p. 30) |

True or False Questions

1. **F** (p. 25)
2. **F** (p. 32)
3. **F** (p. 22)
4. **T** (p. 32)
5. **T** (p. 31)
6. **T** (p. 33)
7. **T** (p. 32)
8. **T** (p. 36)
9. **F** (p. 37)
10. **F** (p. 19)
11. **T** (p. 37)
12. **T** (p. 37)
13. **F** (p. 33)

Short Answer Questions

1. The research problem identifies the research gaps/issues that exist in the current literature. The research question should be challenging but not too difficult, worthwhile and important, and feasible. (p. 21)
2. In studies using quantitative approaches, theory is generally used to guide the entire research process. In studies using qualitative approaches, theory can guide the research process and/or theory can be applied as an outcome following the research process. (p. 24)
3. Descriptive research problems describe phenomenon, events, conditions, or circumstances, however no attempt is made to explain the outcomes or link the information. An example of a descriptive research problem would be conducting a self-report questionnaire on the number of people enrolled in a yoga exercise group compared to a kickboxing exercise group. (p. 22)
4. There are many ways of organizing literature. Two examples include creating a literature map or an annotated bibliography. A literature map is a visual representation of the existing studies and attempts to draw together the existing studies and the research topic of interest. An annotated bibliography involves writing out the citation and summarizing and critiquing the literature you have identified. The goal is to summarize the value and the relevance of the literature to your research topic. (p. 28)
5. A literature review topic should be narrowly focused and be related to an important worthwhile problem in the literature. Being familiar with the literature (1) helps a researcher identify a topic and understand where the topic is situated within a research problem, (2) it informs the purpose of the research, and (3) it helps guide the research questions. (p. 20)
6. The hypothesis is a prediction that is derived from theory, literature or speculation about the outcome of the study. The alternative hypothesis (also called the research hypothesis) makes statements about the strength and the direction of the research results. (p. 37)

Long Answer Questions

1. Identification of a research topic usually comes from the researcher's interests, experiences, coursework, and academic background. Other ways of identifying a topic include reviewing research and paying attention to controversial issues in the area of interest. Once you have a thorough understanding of the existing research and knowledge of the topic that interests you, you need to develop a research problem. Asking yourself questions such as "Why does this research need to be conducted?" and "What has not been done?" are important when identifying a research problem. Research review papers, meta-analyses and textbook chapters are useful tools when trying to identify a research problem as they summarize what has been done to date. While reviewing these papers, it is helpful to get acquainted with all kinds of research studies and pay attention to the future directions and limitations mentioned in the discussion. (pp. 19–21)

2.
 1. Become familiar with a small number of publications that are important in your field of interest. Try talking to a professor or researcher in the area to help you become acquainted with key publications in the field.
 2. Try to capture the big picture and the ideas in the research paper, be critical and cautious.
 3. Do not get bogged down by research that is peripheral to your interests. Stick to what you like and what you can understand based on your knowledge and background
 4. Read the abstract, if it sparks some interest or curiosity, continue to read the article. The abstract is a great starting point because it provides a summary of the research background, purpose, method, results and conclusion.
 5. Pay attention to the discussion, this section of the article includes a discussion of the strengths and limitations of the work and offers ideas for future research. (pp. 27–28)
3. (1) Identify the purpose/ objective/ aim of the study, (2) identify the study variables (e.g., independent, dependent, control), (3) identify the theoretical framework or model that is guiding the study, (4) identify the participants targeted for the study, and (5) mention the strategy for inquiry (e.g., survey research, experimental). (p. 33)
4. Before gaining sources for a literature review, it is helpful to identify key words that describe your topic of interest. Once you have generated a list of key words, you can use search tools to gain sources. Examples of search tools include online search engines such as Google Scholar and computerized databases (e.g., PubMed, Web of Science). Gaining sources for a literature review is primarily accomplished through reading research articles, book chapters, meta-analyses, conceptual articles and published reports. When selecting papers to include in your literature review, it is important to consider how the papers ties into your research topic and your research problem. Be sure to include papers that are up to date, justify the research problem and provide complementary and contrasting views. Once you are ready to write the literature review it is important to understand that there are three main parts: (1) the introduction (a statement of the problem, use the introduction to spark interest to the reader), (2) the body (identify what is and what is not known about the problem), and (3) the conclusion (a summary of the existing studies with the purpose statement, research questions, and/ or hypotheses). (pp. 27–30)