



ΠΑΡΑΔΟΤΕΟ ΕΡΓΟΥ

**ΤΙΤΛΟΣ ΥΠΟΕΡΓΟΥ: «Πρόγραμμα Διδακτορικών Σπουδών του Τμήματος
Ψυχολογίας, Πράξη Υποστήριξη Διεθνοποίησης του Πανεπιστημίου Δυτικής
Μακεδονίας»**

**ΤΗΣ ΠΡΑΞΗΣ ΜΕ ΤΙΤΛΟ «ΥΠΟΣΤΗΡΙΞΗ ΔΡΑΣΕΩΝ ΔΙΕΘΝΟΠΟΙΗΣΗΣ ΤΟΥ
ΠΑΝΕΠΙΣΤΗΜΙΟΥ ΔΥΤΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ»**

ΚΩΔΙΚΟΣ ΕΡΓΟΥ: ΟΠΣ (MIS)5158681

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Προγράμματος Διδακτορικών Σπουδών Τμήματος Ψυχολογίας»

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Υποβολή: 27/09/2024





ADVANCED RESEARCH METHODS

Units Detailed Outline, Activities and Supplementary
Material

Florina
2024



Με τη συγχρηματοδότηση
της Ευρωπαϊκής Ένωσης



Πρόγραμμα
Ανθρώπινο Δυναμικό και
Κοινωνική Συνοχή



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1ST LEARNING UNIT OUTLINE

Overview of the Learning Unit

Study Week	<i>1st Week</i>
Title	Introduction to Advanced Research Methods
LU Description	This introductory lesson on advanced research methods provides students with a foundational understanding of research methods in Psychology. The class aims to highlight the significance of research methods, differentiate between quantitative and qualitative research approaches, and introduce key concepts and principles in research methodology. The lesson encourages critical thinking about the research process and emphasizes the importance of validity and reliability in research
Concepts – Keywords	Research design, research questions, hypotheses, variables, data collection, sampling, data analysis, validity, reliability, literature review
Learning Outcomes	<ol style="list-style-type: none"> 1. Identify key concepts and principles in research methodology 2. Demonstrate an understanding of how different research approaches can be used to investigate specific research questions, 3. Examine the strengths and limitations of different research approaches in addressing research questions, 4. Formulate research questions that demonstrate an understanding of the relationship between research methods and specific research interests, 5. Assess the appropriateness of different research approaches for addressing specific research questions, 6. Critique research studies in terms of their strengths and limitations.
Evaluation of LO	<i>LOs not directly assessed</i>
Strategies/ Teaching Techniques	<i>Presentation (theory), activities, self-assessment, video, group discussion</i>





Estimated Study Time	27,5 hours
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Detailed Description of Educational Activities and Learning Objects

1 st Educational Activity	
Title of EA	Study Material (core bibliography)
Description	<i>Study the presentation file titled "Introduction to Advanced Research Methods in Psychology: Key Concepts and Principles" which briefly presents an introduction to advanced research methods and presents key concepts and principles of research methods.</i>
Estimated Study Time	5hours
Description of the 1 st Learning Object	
Title of LO	Study Material
Learning Outcomes	L.O. 1-6
Language	English
Type	Theory, Presentation of theory
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
Introduction to Advanced Research Methods.pptx	

2 nd Educational Activity	
Title of EA	Exploring Famous Psychological Studies (group activity, group discussion)
Description	<i>In this educational activity, students will delve into the world of famous psychological studies, both successful and controversial. This activity aims to foster critical thinking</i>





	<i>and analysis by examining the research questions, research designs, key findings, and the role of research design in these studies.</i>
Estimated Study Time	1 hour
Description of the 2nd Learning Object	
Title of LO	Importance of Choosing the Appropriate Research Design
Learning Outcomes	LO6
Language	English
Type	Group Discussion
Supporting Resources (Bibliography/ Webography)	Indicative: https://www.psychologicalscience.org/observer/classics-research-ethics https://www.apa.org/monitor/2010/01/little-albert
Content of Learning Object	
Activity1. Exploring Famous Psychological Studies.docx.	

3rd Educational Activity	
Title of EA	Research Design Challenge (theory application)
Description	<i>This activity is designed to engage students in a hands-on exploration of various research designs. It encourages them to apply their knowledge of research methods by designing research studies for specific scenarios.</i>
Estimated Study Time	2 hours
Description of the 3rd Learning Object	
Title of LO	How different research approaches can be used to investigate specific research questions
Learning Outcomes	LO2-LO5
Language	English





Type	Group Activity, Group discussion
Supporting Resources (Bibliography/ Webography)	Presentation Doctoral Study Program Textbook
Content of Learning Object	
Activity2. Research Design Challenge.docx	

4 th Educational Activity	
Title of EA	Introduction to Advanced Methods in Psychology (true – false questions)
Description	<i>Please indicate whether the following statements are true (T) or false (F).</i>
Estimated Study Time	0,5 hour
Description of the 4 th Learning Object	
Title of LO	Introduction to Advanced Research Methods
Learning Outcomes	LO1-LO6
Language	English
Type	Self-assessment
Supporting Resources (Bibliography/ Webography)	Presentation Doctoral Study Program Textbook
Content of Learning Object	
<p><i>For each question, mark "T" for True or "F" for False. Each question is worth 1 point. Calculate your total score out of 10.</i></p> <ol style="list-style-type: none"> <i>True or False: Research methods in psychology aim to provide evidence that either supports or challenges existing theories. Correct Answer: True</i> <i>True or False: Research design involves collecting and analyzing data to answer research questions effectively.</i> 	





Correct Answer: True

3. *True or False: In an experiment, the independent variable is the outcome variable that researchers are interested in studying.*

Correct Answer: False

4. *True or False: Reliability refers to the consistency and stability of research findings over time and across different conditions.*

Correct Answer: True

5. *True or False: Qualitative research methods are valuable for exploring complex phenomena and generating hypotheses.*

Correct Answer: True

6. *True or False: Informed consent is not required when conducting research with human participants, as it can bias their responses.*

Correct Answer: False

7. *True or False: Internal validity is concerned with whether the research findings can be generalized to the broader population.*

Correct Answer: False

8. *True or False: Cross-sectional studies involve collecting data from the same individuals at multiple time points to track changes over time.*

Correct Answer: False

9. *True or False: Ethical considerations in research are only important when studying vulnerable populations, such as children or patients.*

Correct Answer: False

10. *True or False: An experimental design is the only valid research design for investigating causal relationships between variables.*

Correct Answer: False

Scoring:

Each correct answer is worth 1 point.

Calculate your total score out of 10.

5th Educational Activity

Title of EA

Additional readings (optional)





Description	<p>Additional reading covering the theory discussed:</p> <p>OER: Jhangiani, R. S., Chiang, I. C. A., Cuttler, C., & Leighton, D. C. (2019). Research methods in psychology. Kwantlen Polytechnic University.</p> <p>Chapter II: Overview of the Scientific Method https://kpu.pressbooks.pub/psychmethods4e/part/overview-of-the-scientific-method/</p> <p><i>Dawes, R. (2011). How do you formulate a testable exciting hypothesis?. How to write a successful research grant application: A guide for social and behavioral scientists, 147-151.</i></p> <p><i>Edelson, D. C. (2002). Design research: What we learn when we engage in design. The Journal of the Learning sciences, 11(1), 105-121.</i></p> <p><i>Golafshani, N. (2003). Understanding reliability and validity in qualitative research. The qualitative report, 8(4), 597-607.</i></p> <p><i>Hiebert, J., Cai, J., Hwang, S., Morris, A. K., & Hohensee, C. (2022). How Do You Formulate (Important) Hypotheses?. In Doing Research: A New Researcher's Guide (pp. 17-49). Cham: Springer International Publishing.</i></p> <p><i>Levitt, H. M., Bamberg, M., Creswell, J. W., Frost, D. M., Josselson, R., & Suárez-Orozco, C. (2018). Journal article reporting standards for qualitative primary, qualitative meta-analytic, and mixed methods research in psychology: The APA Publications and Communications Board task force report. American Psychologist, 73(1), 26.</i></p>
Estimated Study Time	15hours
Description of the 5 th Learning Object	
Title of LO	Additional readings (indicative)
Learning Outcomes	LO1-LO6
Language	English





Type	Theory
Supporting Resources (Bibliography/ Webography)	the Research Methods Knowledge Base: https://conjointly.com/kb/
Content of Learning Object	
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6 th Educational Activity	
Title of EA	Suggested videos
Description	<p><i>You can visit the links below for watching videos related with this unit:</i></p> <ul style="list-style-type: none"> • <i>Not all scientific studies are created equal - David H. Schwartz:</i> https://www.youtube.com/watch?v=GUpd2HJHUt8&ab_channel=TED-Ed • <i>How to read an academic paper (without losing your mind):</i> https://www.youtube.com/watch?v=SKxm2HF-k0&t=2s&ab_channel=UBCiSchool • <i>Research Designs (Harvard mini lectures):</i> https://www.youtube.com/watch?v=GYQBu3EF7k8&list=PLloZywl_5qG050Ek8ZBvO-nTxgLTQUjHy&index=1&ab_channel=BenjaminLe https://www.youtube.com/watch?v=oUpw1ZEmTsc&list=PLloZywl_5qG050Ek8ZBvO-nTxgLTQUjHy&index=2&t=2s&ab_channel=BenjaminLe https://www.youtube.com/watch?v=nt-oKsAJYuc&list=PLloZywl_5qG050Ek8ZBvO-nTxgLTQUjHy&index=3&ab_channel=BenjaminLe • <i>Threats to Reliability and Validity:</i> https://www.youtube.com/watch?v=Xxi0ridxVPE&list=PLloZywl_5qG050Ek8ZBvO-nTxgLTQUjHy&index=7&ab_channel=BenjaminLe





	<p>https://www.youtube.com/watch?v=lKoUv91SOLw&list=PLloZywl_5qG050Ek8ZBvO-nTxgLTQUjHy&index=8&ab_channel=BenjaminLe</p> <p>https://www.youtube.com/watch?v=1dTUB2tRO7o&list=PLloZywl_5qG050Ek8ZBvO-nTxgLTQUjHy&index=9&ab_channel=BenjaminLe</p> <p>https://www.youtube.com/watch?v=KPyeyDneScE&list=PLloZywl_5qG050Ek8ZBvO-nTxgLTQUjHy&index=10&ab_channel=BenjaminLe</p> <p>https://www.youtube.com/watch?v=wPHh6Q3Gwt&list=PLloZywl_5qG050Ek8ZBvO-nTxgLTQUjHy&index=11&ab_channel=BenjaminLe</p>
Estimated Study Time	3 hours
Description of the 6 th Learning Object	
Title of LO	Suggested videos
Learning Outcomes	LO1-LO6
Language	English
Type	Theory
Supporting Resources (Bibliography/ Webography)	--
Content of Learning Object	
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7 th Educational Activity	
Title of EA	The Role of Research Methods in Advancing Psychology (forum discussion)
Description	<i>Can you provide examples of how research methods have contributed to significant advancements or breakthroughs in psychology?</i>





	<i>Please present your arguments on forum and discuss.</i>
Estimated Study Time	1hour
Description of the 7th Learning Object	
Title of LO	The Role of Research Methods in Advancing Psychology
Learning Outcomes	LO2, LO3, LO5, LO6
Language	English
Type	Application
Supporting Resources (Bibliography/ Webography)	---
Content of Learning Object	

2nd LEARNING UNIT OUTLINE

Overview of the Learning Unit

Study Week	<i>2nd Week</i>
Title	Ethical guidelines in psychological research
LU Description	This lesson provides doctoral students with an essential understanding of the ethical considerations and principles that guide ethical research practices. The class emphasizes the importance of ethical guidelines in protecting research participants and maintaining the integrity of psychological research. Students explore key concepts such as informed consent, privacy and confidentiality, protection from harm, beneficence, and research integrity.
Concepts – Keywords	Ethical Guidelines, informed consent, privacy and confidentiality, protection from harm, beneficence, research ethics committees, research integrity, ethical





	dilemma, debriefing, vulnerable populations, research misconduct.
Learning Outcomes	<ol style="list-style-type: none"> 1. Identify key ethical principles and codes of conduct relevant to psychological research 2. Apply ethical considerations to propose strategies for addressing ethical challenges in research, 3. Analyze and evaluate the ethical implications of real-life case studies or examples of ethical dilemmas in psychological research, 4. Assess the ethical implications and potential consequences of various research decisions and actions, 5. Create strategies to address ethical challenges in psychological research, integrating multiple ethical principles and considering the specific context.
Evaluation of LO	<i>LOs not directly assessed</i>
Strategies/ Teaching Techniques	<i>Presentation (theory), activities/ self-assessment, video, group discussion, case study</i>
Estimated Study Time	<i>25,5 hours</i>

Detailed Description of Educational Activities and Learning Objects

1st Educational Activity	
Title of EA	Study Material (core bibliography)
Description	<i>Study the presentation file titled “Ethical Guidelines in Psychological Research: Protecting Participants and Ensuring Research Integrity” which provides doctoral students with an essential understanding of the ethical considerations and principles that guide ethical research practices.</i>
Estimated Study Time	5hours
Description of the 1st Learning Object	
Title of LO	<i>Study Material</i>





Learning Outcomes	L.O. 1-5
Language	English
Type	Theory, Presentation of theory
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
Introduction to Advanced Research Methods.pptx	

2nd Educational Activity	
Title of EA	Ethical dilemmas (group discussion)
Description	<i>Navigating ethical dilemmas requires a commitment to upholding ethical principles, respecting the rights and well-being of research participants, and seeking guidance when complex ethical decisions arise. Can you recognize the ethical principles at stake in the above examples? How would you resolve these issues? What would you suggest the researchers to do?</i>
Estimated Study Time	1 hour
Description of the 2nd Learning Object	
Title of LO	How to navigate and resolve ethical dilemmas
Learning Outcomes	LO1-LO5
Language	English
Type	Group discussion
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
Activity 1. How to navigate and resolve ethical dilemmas.docx	





3rd Educational Activity	
Title of EA	Ethical Committees (application)
Description	<i>The activity aims to familiarize students with the ethical review process and practice writing an ethics committee application for a hypothetical research study.</i>
Estimated Study Time	2 hours
Description of the 3rd Learning Object	
Title of LO	Ethics Committee Application Simulation
Learning Outcomes	LO1-LO5
Language	English
Type	Application
Supporting Resources (Bibliography/ Webography)	https://www.uowm.gr/en/research/research-ethics-committee/
Content of Learning Object	
Activity 2. Ethics Committee Application Simulation.docx	

4th Educational Activity	
Title of EA	Ethical Guidelines in Action (short answer)
Description	<i>In this activity, you will be presented with two short case studies. Your task is to carefully read each case study and identify the ethical considerations and principles that are addressed in each scenario. Consider how researchers or clinicians have followed ethical guidelines to protect the rights, well-being, and privacy of the individuals involved.</i>
Estimated Study Time	2 hours
Description of the 4th Learning Object	





Title of LO	Identifying Ethical Considerations in Case Studies
Learning Outcomes	LO1-LO5
Language	English
Type	Application
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
<p>Instructions: <i>In this activity, you will be presented with four case studies from the fields of developmental psychology and clinical psychology. Your task is to carefully read each case study and identify the ethical considerations and principles that are addressed in each scenario. Consider how researchers or clinicians have followed ethical guidelines to protect the rights, well-being, and privacy of the individuals involved.</i></p> <p>Case Study 1: Adolescent Identity Development</p> <p>A study is exploring identity development in adolescents, including sensitive topics related to identity crises and self-esteem.</p> <p>Indicative answer: Informed Consent: Adolescents and their parents were fully informed about the study's purpose, procedures, and potential discomfort. Consent was obtained from parents, and assent was obtained from adolescents. Protection from Harm: Researchers implemented measures to minimize emotional distress, ensuring participants' emotional well-being. Debriefing: Participants received debriefing sessions to discuss any emotional reactions and provide resources for additional support if needed. Privacy and Confidentiality: Strict measures were followed to maintain the confidentiality of participants' responses.</p> <p>Case study 2: Research on Treatment Outcomes: A clinical psychologist is conducting a research study to evaluate the effectiveness of different treatment approaches for depression.</p> <p>Indicative answer: Informed Consent: Participants in the study were provided with detailed information about the research, including potential risks and benefits. Informed consent was obtained. Protection from Harm: The psychologist closely monitored participants' emotional well-being throughout the study, offering additional support when necessary. Debriefing: Participants were debriefed at the end of the study, provided with the study's results, and offered resources for further assistance.</p>	





Data Security: Measures were taken to secure and anonymize participant data, ensuring privacy and confidentiality.

5th Educational Activity	
Title of EA	Ethical guidelines in psychological research (multiple choice questions)
Description	<i>Please read each question carefully and select the best answer from the options provided. Choose the option that most accurately represents the correct response based on what you've learned about ethical guidelines in psychological research during this week's presentation.</i>
Estimated Study Time	0,5 hours
Description of the 5th Learning Object	
Title of LO	Ethical Guidelines in Psychological Research
Learning Outcomes	LO1-LO6
Language	English
Type	Self-assessment
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
<p><i>Please read each question carefully and select the best answer from the options provided. Choose the option that most accurately represents the correct response based on what you've learned about ethical guidelines in psychological research during this week's presentation.</i></p> <p>What is the primary purpose of ethical guidelines in psychological research?</p> <ol style="list-style-type: none"> To ensure all research studies are approved by ethics committees. To protect the rights and well-being of research participants. To guarantee the success and publication of research studies. To increase the complexity of research designs. <p>Answer: b. To protect the rights and well-being of research participants.</p> <p>Informed consent is an ethical principle that emphasizes:</p> <ol style="list-style-type: none"> The need for participants to be aware of the study's hypothesis. 	





- b. The importance of withholding information from participants.
- c. The necessity of participants voluntarily agreeing to take part in a study.
- d. The use of deception to maximize research outcomes.

Answer: c. The necessity of participants voluntarily agreeing to take part in a study.

Which of the following is NOT an example of vulnerable populations in research?

- a. College students
- b. Children
- c. Individuals with cognitive disabilities
- d. Prison inmates

Answer: a. College students.

What is the primary responsibility of researchers in ensuring participant privacy and confidentiality?

- a. To publish participants' personal information to validate the research.
- b. To avoid informing participants about data security measures.
- c. To take all necessary precautions to protect participant data.
- d. To share participant data freely with other researchers.

Answer: c. To take all necessary precautions to protect participant data.

What does the term "debriefing" in research refer to?

- a. Providing participants with a summary of the study's results.
- b. Explaining the research study's purpose and procedures to participants after their involvement.
- c. Deceiving participants about the true nature of the study.
- d. Obtaining informed consent from participants.

Answer: b. Explaining the research study's purpose and procedures to participants after their involvement.

Which ethical principle involves minimizing any harm or discomfort to research participants?

- a. Beneficence
- b. Confidentiality
- c. Informed consent
- d. Debriefing

Answer: a. Beneficence.

Research misconduct may include which of the following?

- a. Publishing research findings without peer review
- b. Failing to properly cite sources in a research paper
- c. Fabricating data or results
- d. Collaborating with other researchers





Answer: c. Fabricating data or results.

What is the role of an ethics committees in research?

- a. To conduct the research study
- b. To approve and oversee the ethical aspects of the study
- c. To publish the research findings
- d. To analyze the research data

Answer: b. To approve and oversee the ethical aspects of the study.

Which ethical principle emphasizes fairness and impartiality in research, ensuring that participants are treated equitably?

- a. Autonomy
- b. Justice
- c. Beneficence
- d. Fidelity

Answer: b. Justice.

What should researchers do if they discover an ethical issue or violation during a study?

- a. Ignore it to avoid complications
- b. Report it to the relevant ethics committee or supervisor
- c. Continue with the study as planned
- d. Withdraw the study from publication

Answer: b. Report it to the relevant ethics committee or supervisor.

6th Educational Activity

Title of EA	Additional readings (optional)
Description	<p>Additional reading covering the theory discussed:</p> <p>OER: Jhangiani, R. S., Chiang, I. C. A., Cuttler, C., & Leighton, D. C. (2019). Research methods in psychology. Kwantlen Polytechnic University.</p> <p>Chapter III: Research Ethics</p> <p>https://ecampusontario.pressbooks.pub/psychmethods3ecan/part/research-ethics/</p>





	<p>How the Classics Changed Research Ethics: https://www.psychologicalscience.org/observer/classics-research-ethics</p> <p>Gross, C. (2016). Scientific misconduct. <i>Annual review of psychology</i>, 67, 693-711. https://www.annualreviews.org/doi/abs/10.1146/annurev-psych-122414-033437</p> <p>Nosek, B. A., Banaji, M. R., & Greenwald, A. G. (2002). E-research: Ethics, security, design, and control in psychological research on the Internet. <i>Journal of Social Issues</i>, 58(1), 161-176. https://spssi.onlinelibrary.wiley.com/doi/abs/10.1111/1540-4560.00254?casa_token=eULmmyiUG64AAAAA:eD6AWQeyw1Ad-awSmjpoO80MVpcp8drOlhx3n5q2340ERy7Key7LhHh57Na9nEmHk5XPZ4vwWiN-K</p> <p>Oates, J., Carpenter, D., Fisher, M., Goodson, S., Hannah, B., Kwiatowski, R., ... & Wainwright, T. (2021, April). BPS code of human research ethics. <i>British Psychological Society</i>. https://discovery.dundee.ac.uk/en/publications/bps-code-of-human-research-ethics?utm_campaign=share&utm_medium=email&utm_source=email_share_mailer</p> <p>Pittaway, E., Bartolomei, L., & Hugman, R. (2010). 'Stop stealing our stories': The ethics of research with vulnerable groups. <i>Journal of human rights practice</i>, 2(2), 229-251. https://academic.oup.com/jhrp/article/2/2/229/2188714</p>
Estimated Study Time	12 hours
Description of the 6 th Learning Object	
Title of LO	Additional readings (indicative)
Learning Outcomes	LO1-LO5
Language	English
Type	Theory





Supporting Resources (Bibliography/ Webography)	https://www.uowm.gr/en/research/research-ethics-committee/
Content of Learning Object	
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7 th Educational Activity	
Title of EA	Suggested videos, websites
Description	<p><i>You can visit the links below for watching videos related with this unit:</i></p> <p><i>Trust in research -- the ethics of knowledge production:</i> https://www.youtube.com/watch?v=JSV4VZ8gdUQ&ab_channel=TEDxTalks</p> <p><i>Associate Professor Nicola Taylor on Ethical Research Involving Children:</i> https://www.youtube.com/watch?v=eLckZKue5Bo&ab_channel=UNICEFInnocenti</p> <p><i>Research Ethics:</i> https://www.youtube.com/watch?v=jD-YCDE_5yw&ab_channel=YaleUniversity</p> <p><i>Five principles for research ethics:</i> https://www.apa.org/monitor/jan03/principles</p>
Estimated Study Time	2 hours
Description of the 7 th Learning Object	
Title of LO	Suggested videos
Learning Outcomes	LO1-LO5
Language	English
Type	Theory
Supporting Resources (Bibliography/ Webography)	--





Content of Learning Object
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8th Educational Activity	
Title of EA	Ethical Considerations in Research (Forum discussion)
Description	<i>Based on Activity 2 share your experiences, challenges, and insights related to the application process. Discuss the importance of ethical considerations in research as well as the ethical considerations that you addressed in your application.</i>
Estimated Study Time	1 hour
Description of the 8th Learning Object	
Title of LO	Ethical Considerations in Research
Learning Outcomes	LO1 – LO5
Language	English
Type	Application
Supporting Resources (Bibliography/ Webography)	---
Content of Learning Object	
Activity 2. Ethics Committee Application Simulation.docx	

3rd LEARNING UNIT OUTLINE

Overview of the Learning Unit

Study Week	3 rd Week
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Title	Experimental Design and Control
LU Description	This lesson introduces doctoral students to the fundamental concepts and principles of experimental design in psychological research. The class focuses on the importance of designing experiments that establish causal relationships between variables and minimize potential biases. Through a combination of lectures, group activities, and discussions, students explore key concepts such as independent and dependent variables, control groups, random assignment, and the manipulation of variables.
Concepts – Keywords	Experimental design, independent variable, dependent variable, control group, random assignment, manipulation of variables, internal validity, external validity, confounding variables, counterbalancing, Quasi-Experimental Design, Between-Subjects Design, Within-Subjects Design.
Learning Outcomes	<ol style="list-style-type: none"> 1. Identify and define key terms related to experimental design, such as independent variables, dependent variables, control groups, and random assignment. 2. Differentiate between experimental and non-experimental research designs. 3. Apply knowledge of experimental design principles to design an experiment based on a given research question or hypothesis. 4. Analyze the strengths and limitations of different experimental designs in terms of internal validity and the ability to establish causal relationships. 5. Evaluate the internal and external validity of experimental designs in terms of their ability to establish causal relationships and generalize findings. 6. Synthesize knowledge of experimental design principles to create an experiment that effectively tests a research question or hypothesis.
Evaluation of LO	<i>LOs not directly assessed</i>
Strategies/ Teaching Techniques	<i>Presentation (theory), activities, self-assessment, video, group discussion, case studies</i>
Estimated Study Time	<i>25,5 hours</i>





Detailed Description of Educational Activities and Learning Objects

1 st Educational Activity	
Title of EA	Study Material (core bibliography)
Description	<i>Study the presentation file titled “Experimental Design and Control in Psychological Research: Establishing Causal Relationships and Minimizing Bias” which briefly presents an introduction to advanced research methods and presents key concepts and principles of research methods.</i>
Estimated Study Time	6 hours
Description of the 1 st Learning Object	
Title of LO	Study Material
Learning Outcomes	L.O. 1-6
Language	English
Type	Theory, Presentation of theory
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
Introduction to Advanced Research Methods.pptx	

2 nd Educational Activity	
Title of EA	Internal Validity (group discussion)
Description	<i>This group discussion activity encourages students to apply the principles of experimental design and control in real-world research scenarios. It fosters critical thinking about the importance of internal validity and how researchers can maximize it in their experiments.</i>
Estimated Study Time	1 hour





Description of the 2 nd Learning Object	
Title of LO	Designing Experiments with Maximum Internal Validity
Learning Outcomes	LO4, LO5
Language	English
Type	Group Discussion
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
Activity 1. Designing Experiments with Maximum Internal Validity.docx	

3 rd Educational Activity	
Title of EA	Experimental Design Analysis (case studies)
Description	<i>This application of theory challenges students to apply their knowledge of experimental design principles and control of extraneous variables to real-world research scenarios.</i>
Estimated Study Time	1,5 hours
Description of the 3 rd Learning Object	
Title of LO	Experimental Design Analysis
Learning Outcomes	LO1-LO6
Language	English
Type	Group Discussion
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	





Activity 2. Experimental Design Analysis.docx

4 th Educational Activity	
Title of EA	Experimental Design (true – false questions)
Description	<i>Please indicate whether the following statements are true (T) or false (F).</i>
Estimated Study Time	0,5 hours
Description of the 4 th Learning Object	
Title of LO	Experimental Design
Learning Outcomes	LO1-LO6
Language	English
Type	Self-assessment
Supporting Resources (Bibliography/ Webography)	Presentation Doctoral Study Program Textbook
Content of Learning Object	
<p><i>For each question, mark "T" for True or "F" for False. Each question is worth 1 point. Calculate your total score out of 10.</i></p> <p><i>11. True or False: Random assignment is a crucial technique in experimental design that helps ensure that each participant has an equal chance of being assigned to any experimental condition. Correct Answer: True</i></p> <p><i>12. True or False: Internal validity refers to the extent to which research findings can be generalized to a broader population beyond the study's participants. Correct Answer: False</i></p> <p><i>13. True or False: A control group is a group in an experiment that is exposed to the independent variable, while the experimental group is not. Correct Answer: False</i></p>	





14. *True or False: Counterbalancing is a strategy used to control for order effects in within-subjects experimental designs.*
Correct Answer: True
15. *True or False: Confounding variables are variables that are intentionally manipulated by researchers to see their effects on the dependent variable.*
Correct Answer: False
16. *True or False: In an experimental study, it is essential to maintain a double-blind procedure to minimize experimenter bias.*
Correct Answer: True
17. *True or False: An independent variable is a variable that is observed and measured in an experiment to determine its effect on the dependent variable.*
Correct Answer: False
18. *True or False: External validity refers to the extent to which research findings can be applied to real-world settings and situations.*
Correct Answer: True
19. *True or False: Ethical considerations are not relevant when designing experiments; they only apply to the reporting of research results.*
Correct Answer: False
20. *True or False: Control of extraneous variables is critical to establishing causality in experimental research.*
Correct Answer: True

Scoring:

Each correct answer is worth 1 point.

Calculate your total score out of 10.

5 th Educational Activity	
Title of EA	Additional readings (optional)
Description	<p>Additional reading covering the theory discussed: OER: Jhangiani, R. S., Chiang, I. C. A., Cuttler, C., & Leighton, D. C. (2019). Research methods in psychology. Kwantlen Polytechnic University.</p> <p>Chapter V: Experimental Research</p>





	<p>https://kpu.pressbooks.pub/psychmethods4e/part/experimental-research/</p> <p>Experimental and quasi-experimental designs in implementation research: https://www.sciencedirect.com/science/article/pii/S0165178119306833</p> <p>Criteria of the peer review process for publication of experimental and quasi-experimental research in Psychology: A guide for creating research papers: https://www.redalyc.org/pdf/337/33712016009.pdf</p> <p>Schoeler, T., Duncan, L., Cecil, C. M., Ploubidis, G. B., & Pingault, J. B. (2018). Quasi-experimental evidence on short- and long-term consequences of bullying victimization: A meta-analysis. <i>Psychological bulletin</i>, 144(12), 1229. https://psycnet.apa.org/fulltext/2018-58808-001.html</p> <p>Jaffee, S. R., Strait, L. B., & Odgers, C. L. (2012). From correlates to causes: can quasi-experimental studies and statistical innovations bring us closer to identifying the causes of antisocial behavior?. <i>Psychological bulletin</i>, 138(2), 272. https://psycnet.apa.org/record/2011-24472-001</p> <p>Nastase, S. A., Goldstein, A., & Hasson, U. (2020). Keep it real: rethinking the primacy of experimental control in cognitive neuroscience. <i>NeuroImage</i>, 222, 117254. https://www.sciencedirect.com/science/article/pii/S1053811920307400</p>
Estimated Study Time	15 hours
Description of the 5th Learning Object	
Title of LO	Additional readings (indicative)
Learning Outcomes	LO1-LO6
Language	English
Type	Theory





Supporting Resources (Bibliography/ Webography)	the Research Methods Knowledge Base: https://conjointly.com/kb/
Content of Learning Object	
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6th Educational Activity	
Title of EA	Experimental Design (short answer)
Description	<i>For each of the following topics, decide whether that topic could be studied using an experimental research design and explain why or why not.</i>
Estimated Study Time	1,5 hour
Description of the 6^h Learning Object	
Title of LO	Designing Experiments
Learning Outcomes	LO1-LO6
Language	English
Type	Activity
Supporting Resources (Bibliography/ Webography)	Presentation Doctoral Study Program Textbook
Content of Learning Object	
<p><i>For each of the following topics, decide whether that topic could be studied using an experimental research design and explain why or why not.</i></p> <ul style="list-style-type: none"> • Effect of Different Teaching Methods on Elementary School Children's Reading Comprehension <p>Indicative answer: Researchers can manipulate the independent variable, which is the teaching method (e.g., traditional instruction vs. interactive learning), by randomly assigning classrooms to different instructional methods. The dependent variable is the students' reading comprehension scores. By comparing the outcomes, researchers can determine which teaching method is more effective.</p>	





- Impact of Sleep Deprivation on Cognitive Performance:

Indicative answer: Participants can be randomly assigned to either a group that experiences sleep deprivation or a control group that gets a full night's sleep. The independent variable is sleep deprivation, and the dependent variables are cognitive performance measures (e.g., memory, attention). Researchers can assess how sleep deprivation affects cognitive functioning.

- Influence of Poverty on Cognitive Development in Infants:

Indicative answer: Researchers cannot assign infants to grow up in impoverished conditions intentionally. Instead, studies in this area often use observational designs to examine the effects of real-life circumstances.

- Effect of Smartphone Use Before Bedtime on Sleep Quality:

Indicative answer: Participants can be randomly assigned to use a smartphone before bedtime or to abstain from smartphone use before bedtime (control group). The independent variable is smartphone use, and the dependent variable is sleep quality (measured through sleep duration and sleep disturbances). Researchers can investigate whether smartphone use impacts sleep.

- Impact of Music Genre on Mood and Productivity:

Indicative answer: Participants can be randomly exposed to different music genres (e.g., classical, rock, jazz) while completing tasks. The independent variable is music genre, and the dependent variables are mood (self-reported) and productivity (e.g., tasks completed). Researchers can examine how music influences mood and task performance.

- Effect of Severe Stress on Immune Functioning:

Indicative answer: Exposing participants to severe stressors can have negative consequences on their well-being and health. Ethical guidelines prevent researchers from intentionally causing severe stress in experimental settings.

- Impact of Exercise on Cognitive Function in Older Adults:

Indicative answer: Older adults can be randomly assigned to either an exercise group or a sedentary control group. The independent variable is exercise, and the dependent variable is cognitive function (e.g., memory, attention). Researchers can assess whether regular exercise improves cognitive abilities in older adults.

- Influence of Alcohol Consumption on Risky Behavior:

Indicative answer: Conducting an experimental study where participants are randomly assigned to consume varying amounts of alcohol and then engage in risky behaviors is ethically problematic. It could lead to harm or dangerous situations.





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4th LEARNING UNIT OUTLINE

Overview of the Learning Unit

Study Week	4 th Week
Title	Formulating Research Questions and Hypotheses
LU Description	This lesson is an exploration of the initial stages of research in psychology. It guides students through the process of formulating research questions and hypotheses, emphasizing the critical role these elements play in shaping the entire research endeavor. Students will learn to identify key concepts, define variables, and develop clear, testable research questions. Additionally, they will understand how hypotheses provide specific predictions that guide research design and data analysis.
Concepts – Keywords	Research questions, Hypotheses, Variables, Testable, Specific predictions, Research design
Learning Outcomes	<ol style="list-style-type: none"> 1. List the key components of a well-formulated research question, 2. Describe how hypotheses provide specific predictions in research, 3. Formulate research questions based on given research topics, 4. Evaluate the clarity and testability of research questions, 5. Construct hypotheses that align with research questions and guide data collection and analysis.
Evaluation of LO	<i>LOs not directly assessed</i>
Strategies/ Teaching Techniques	<i>Presentation (theory), activities, self-assessment, video, group discussion</i>





Estimated Study Time	27,5 hours
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Detailed Description of Educational Activities and Learning Objects

1 st Educational Activity	
Title of EA	Study Material (core bibliography)
Description	<i>Study the presentation file titled “Formulating Research Questions and Hypotheses” which briefly guides students through the process of formulating research questions and hypotheses, emphasizing the critical role these elements play in shaping the entire research endeavor.</i>
Estimated Study Time	5 hours
Description of the 1 st Learning Object	
Title of LO	Study Material
Learning Outcomes	L.O. 1-5
Language	English
Type	Theory, Presentation of theory
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
Introduction to Advanced Research Methods.pptx	

2 nd Educational Activity	
Title of EA	Research Questions and Hypotheses (group activity, group discussion)
Description	<i>In this activity, students will be divided into small groups and provided with a research topic related to psychology. Each group's task is to collaboratively formulate research</i>





	<i>questions and hypotheses based on the given topic. They should consider the key concepts discussed in the lesson, such as clarity, testability, and specificity.</i>
Estimated Study Time	1hour
Description of the 2nd Learning Object	
Title of LO	Formulating Research Questions and Hypothesis
Learning Outcomes	LO1-LO5
Language	English
Type	Group Discussion
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
Activity1. Formulating Research Questions and Hypotheses.docx.	

3rd Educational Activity	
Title of EA	Mindfulness meditation and stress (theory application)
Description	<i>In this case study, students will be presented with a hypothetical research scenario. They will be asked to read the scenario, identify the research questions and hypotheses, and evaluate their clarity and testability.</i>
Estimated Study Time	1hours
Description of the 3rd Learning Object	
Title of LO	Case Study
Learning Outcomes	LO1-LO5
Language	English
Type	Group Activity, Case Study





Supporting Resources (Bibliography/ Webography)	Presentation Doctoral Study Program Textbook
Content of Learning Object	
Activity2. Case Study_Mindfulness meditation and stress.docx	

4 th Educational Activity	
Title of EA	Additional readings (optional)
Description	<p>Additional reading covering the theory discussed:</p> <p>OER: Jhangiani, R. S., Chiang, I. C. A., Cuttler, C., & Leighton, D. C. (2019). Research methods in psychology. Kwantlen Polytechnic University.</p> <p>9. Generating Good Research Questions https://kpu.pressbooks.pub/psychmethods4e/chapter/generating-good-research-questions/</p> <p>10. Developing a Hypothesis https://kpu.pressbooks.pub/psychmethods4e/chapter/developing-a-hypothesis/</p> <p>Dawes, R. (2011). How do you formulate a testable exciting hypothesis?. How to write a successful research grant application: A guide for social and behavioral scientists, 147-151.</p> <p>Hiebert, J., Cai, J., Hwang, S., Morris, A. K., & Hohensee, C. (2022). How Do You Formulate (Important) Hypotheses?. In Doing Research: A New Researcher's Guide (pp. 17-49). Cham: Springer International Publishing.</p> <p>Aslam, S., & Emmanuel, P. (2010). Formulating a researchable question: A critical step for facilitating good clinical research. Indian journal of sexually transmitted diseases and AIDS, 31(1), 47.</p>





	<p><i>Rojon, C., & Saunders, M. N. (2012). Formulating a convincing rationale for a research study. Coaching: An International Journal of Theory, Research and Practice, 5(1), 55-61.</i></p> <p><i>Van der Schee, J. (2001). How to Train Students to Formulate Good Research Questions?. International Research in Geographical and Environmental Education, 10(3), 245-259.</i></p> <p><i>Mantzoukas, S. (2008). Facilitating research students in formulating qualitative research questions. Nurse Education Today, 28(3), 371-377.</i></p> <p><i>Agee, J. (2009). Developing qualitative research questions: A reflective process. International journal of qualitative studies in education, 22(4), 431-447.</i></p>
Estimated Study Time	18hours
Description of the 5th Learning Object	
Title of LO	Additional readings (indicative)
Learning Outcomes	LO1-LO6
Language	English
Type	Theory
Supporting Resources (Bibliography/ Webography)	<p>the Research Methods Knowledge Base: https://conjointly.com/kb/</p> <p>Sage Research Methods: https://methods.sagepub.com/</p>
Content of Learning Object	
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6th Educational Activity	
Title of EA	Research Questions and Hypotheses (forum discussion)





Description	<i>Below you will find five research projects, their research questions and hypotheses formulated by researchers. You are asked to analyze these examples and identify potential issues with each one.</i> <i>Please choose one, present your arguments on forum and discuss.</i>
Estimated Study Time	1hour
Description of the 6th Learning Object	
Title of LO	Evaluating Research Questions and Hypotheses
Learning Outcomes	LO1, LO5
Language	English
Type	Application
Supporting Resources (Bibliography/ Webography)	---
Content of Learning Object	
Activity 3.Evaluating Research Questions and Hypotheses.docx	

5th LEARNING UNIT OUTLINE

Overview of the Learning Unit

Study Week	5 th Week
Title	Measurement in Research
LU Description	This lesson is designed to provide students with a fundamental understanding of the importance of measurement in the research process, particularly in the field of Psychology. Measurement is a critical aspect of research as it allows researchers to quantify and collect data about various psychological phenomena. This lesson explores key concepts related to measurement, the





	different measurement scales, reliability, validity, and the process of selecting appropriate measurement tools.
Concepts – Keywords	Measurement, Scales of Measurement, Reliability, Validity, Measurement Tools, Psychometric Properties.
Learning Outcomes	<ol style="list-style-type: none"> 1. Define measurement and its role in research 2. Differentiate between the various scales of measurement and their characteristics, 3. Select an appropriate scale of measurement for a given research scenario, 4. Analyze the psychometric properties of a specific measurement tool, 5. Critique the appropriateness of measurement tools used in published research studies, 6. Create a measurement plan for a hypothetical research study, including the selection of appropriate measurement tools and the consideration of reliability and validity.
Evaluation of LO	<i>LOs not directly assessed</i>
Strategies/ Teaching Techniques	<i>Presentation (theory), activities, self-assessment, video, group discussion</i>
Estimated Study Time	<i>27,5 hours</i>

Detailed Description of Educational Activities and Learning Objects

1st Educational Activity	
Title of EA	Study Material (core bibliography)
Description	<i>Study the presentation file titled “Measurement in Research” which briefly presents key concepts related to measurement, the different measurement scales, reliability, validity, and the process of selecting appropriate measurement tools.</i>
Estimated Study Time	5hours
Description of the 1st Learning Object	
Title of LO	<i>Study Material</i>





Learning Outcomes	L.O. 1-6
Language	English
Type	Theory, Presentation of theory
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
Introduction to Advanced Research Methods.pptx	

2nd Educational Activity	
Title of EA	Scale Selection (application)
Description	<i>In this activity, students will practice selecting the appropriate scale of measurement for different research scenarios.</i>
Estimated Study Time	1hour
Description of the 2nd Learning Object	
Title of LO	Scale Selection Exercise
Learning Outcomes	LO2, LO3
Language	English
Type	Theory Application
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
Activity1. Scale Selection Excercise.docx.	





3rd Educational Activity	
Title of EA	Evaluation of Measurement Tools (theory application)
Description	<i>This activity provides hands-on experience in applying the concepts of measurement, reliability, and validity to real-world research scenarios, helping students develop a practical understanding of measurement in psychological research.</i>
Estimated Study Time	2 hours
Description of the 3rd Learning Object	
Title of LO	Evaluation of Measurement Tools
Learning Outcomes	LO5
Language	English
Type	Group Activity, Group discussion
Supporting Resources (Bibliography/ Webography)	Presentation Doctoral Study Program Textbook
Content of Learning Object	
Activity2. Evaluation of Measurement Tools.docx	

4th Educational Activity	
Title of EA	Measurements in Psychological Research (self-assessment)
Description	
Estimated Study Time	0,5 hour
Description of the 4th Learning Object	
Title of LO	Measurements in Psychological Research
Learning Outcomes	LO1-LO6
Language	English





Type	Self-assessment
Supporting Resources (Bibliography/ Webography)	Presentation Doctoral Study Program Textbook
Content of Learning Object	

5 th Educational Activity	
Title of EA	Additional readings (optional)
Description	<p>Additional reading covering the theory discussed:</p> <p>OER: Jhangiani, R. S., Chiang, I. C. A., Cuttler, C., & Leighton, D. C. (2019). Research methods in psychology. Kwantlen Polytechnic University.</p> <p>Chapter IV: Psychological Measurements https://kpu.pressbooks.pub/psychmethods4e/part/psychological-measurement/</p> <p>Cooper, C. (2023). <i>An Introduction to Psychometrics and Psychological Assessment: Using, Interpreting and Developing Tests</i>. Routledge.</p> <p>Flores-Kanter, P. E., & Mosquera, M. (2023). <i>How do you Behave as a Psychometrician? Research Conduct in the Context of Psychometric Research</i>. <i>The Spanish Journal of Psychology</i>, 26, e13.</p> <p>Goularte, J. F., & Rosa, A. R. (2023). <i>Mental Health Assessment via Internet: The Psychometrics in the Digital Era</i>. In <i>Digital Mental Health: A Practitioner's Guide</i> (pp. 49-67). Cham: Springer International Publishing.</p> <p>Brown, G. T., & Zhao, A. (2023). <i>In defence of psychometric measurement: a systematic review of contemporary self-report feedback inventories</i>. <i>Educational Psychologist</i>, 1-15.</p> <p>Speer, A. B., Wegmeyer, L. J., Tenbrink, A. P., Delacruz, A. Y., Christiansen, N. D., & Salim, R. M. (2023). <i>Comparing</i></p>





	<i>forced-choice and single-stimulus personality scores on a level playing field: A meta-analysis of psychometric properties and susceptibility to faking. Journal of Applied Psychology.</i>
Estimated Study Time	17hours
Description of the 5th Learning Object	
Title of LO	Additional readings (indicative)
Learning Outcomes	LO1-LO6
Language	English
Type	Theory
Supporting Resources (Bibliography/ Webography)	--
Content of Learning Object	
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6th Educational Activity	
Title of EA	Suggested videos
Description	<p>You can visit the links below for watching videos related with this unit:</p> <ul style="list-style-type: none"> • <i>Measurement (Part 1):</i> https://www.youtube.com/watch?v=WOyn8Jj4lZo&list=PLIoZywl_5qG050Ek8ZBvO-nTxgLTQUjHy&index=4&ab_channel=BenjaminLe • <i>Measurement (Part 2):</i> https://www.youtube.com/watch?v=JYQ60fdkt14&list=PLIoZywl_5qG050Ek8ZBvO-nTxgLTQUjHy&index=5&ab_channel=BenjaminLe • <i>Measurement (Part 3):</i>





	<p>https://www.youtube.com/watch?v=ILOxo9xl70&list=PLIoZywl5qG050Ek8ZBvO-nTxgLTQUjHy&index=6&ab_channel=BenjaminLe</p> <ul style="list-style-type: none"> • <i>Technology in Clinical Testing and Assessment:</i> https://www.youtube.com/watch?v=sloqv4raFm0&list=PLxf85IzktYWIZu-8SHsmDCfJ7Rznn4jOf&index=56&ab_channel=AmericanPsychologicalAssociation • <i>Technology in Workplace Testing and Assessment:</i> https://www.youtube.com/watch?v=lRoA8Lono3I&list=PLxf85IzktYWIZu-8SHsmDCfJ7Rznn4jOf&index=57&ab_channel=AmericanPsychologicalAssociation
Estimated Study Time	1 hour
Description of the 6 th Learning Object	
Title of LO	Suggested videos
Learning Outcomes	LO1-LO6
Language	English
Type	Theory
Supporting Resources (Bibliography/ Webography)	--
Content of Learning Object	
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7 th Educational Activity	
Title of EA	Measurement (theory application)
Description	<i>Practice: Visit psytoolkit (https://www.psytoolkit.org/) and explore various measurements.</i>





Estimated Study Time	2,5 hours
Description of the 7th Learning Object	
Title of LO	The Psy - Toolkit
Learning Outcomes	LO1-LO6
Language	English
Type	Application
Supporting Resources (Bibliography/ Webography)	---
Content of Learning Object	
<i>Visit psytoolkit (https://www.psytoolkit.org/) and explore various measurements.</i>	

6th LEARNING UNIT OUTLINE

Overview of the Learning Unit

Study Week	6 th Week
Title	Sampling Methods
LU Description	Understanding different sampling methods and their advantages and disadvantages is crucial for ensuring the validity and generalizability of research findings. In this lesson, we explore various sampling techniques, their applications, and the factors that influence their selection.
Concepts – Keywords	Population, Sample, Sampling Frame, Random Sampling, Stratified Sampling, Convenience Sampling, Sampling Bias, Simple Random Sampling, Systematic Sampling, Cluster Sampling, Purposive Sampling, Snowball Sampling, Non-Probability Sampling, Sample Size, Sampling Error.
Learning Outcomes	<ol style="list-style-type: none"> 1. Identify the key components of a sampling frame, 2. Differentiate between probability and non-probability sampling methods,





	<ol style="list-style-type: none"> 3. Calculate the required sample size based on research objectives, 4. Evaluate the potential sources of sampling bias in a research design, 5. Propose strategies for minimizing sampling errors in research, 6. Critique the validity and generalizability of research findings based on the chosen sampling method.
Evaluation of LO	<i>LOs not directly assessed</i>
Strategies/ Teaching Techniques	<i>Presentation (theory), activities, self-assessment, video, group discussion</i>
Estimated Study Time	<i>27,5 hours</i>

Detailed Description of Educational Activities and Learning Objects

1st Educational Activity	
Title of EA	Study Material (core bibliography)
Description	<i>Study the presentation file titled "Sampling Methods" which briefly presents sampling techniques, their applications, and the factors that influence their selection.</i>
Estimated Study Time	5 hours
Description of the 1st Learning Object	
Title of LO	<i>Study Material</i>
Learning Outcomes	<i>L.O. 1-6</i>
Language	English
Type	Theory, Presentation of theory
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	





Introduction to Advanced Research Methods.pptx, Statistics. pptx

2 nd Educational Activity	
Title of EA	Using G*Power for sample size calculations (application)
Description	<i>This activity allows students to gain hands-on experience in using G*Power for sample size calculations, based on research objectives and statistical parameters.</i>
Estimated Study Time	1hour
Description of the 2 nd Learning Object	
Title of LO	Sample Size Calculation with G*Power
Learning Outcomes	LO3
Language	English
Type	Theory Application
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation G*Power application download: https://stats.oarc.ucla.edu/other/gpower/ G*Power Help files, the manual and the user guide: https://stats.oarc.ucla.edu/other/gpower/
Content of Learning Object	
Activity1. Sample Size Calculation with GPower.docx	

3 rd Educational Activity	
Title of EA	Sampling Bias (Case studies)





Description	<i>This activity helps students develop critical thinking skills by examining real-world research scenarios and considering the impact of sampling bias on research outcomes. It also encourages them to think creatively about ways to improve research designs to reduce bias.</i>
Estimated Study Time	1 hour
Description of the 3rd Learning Object	
Title of LO	Identifying Sources of Sampling Bias
Learning Outcomes	LO4
Language	English
Type	Group Activity, Group discussion
Supporting Resources (Bibliography/ Webography)	Presentation Doctoral Study Program Textbook
Content of Learning Object	
Activity2. Identifying Sources of Sampling Bias.docx	

4th Educational Activity	
Title of EA	Probability and Non-Probability Sampling Methods (self-assessment)
Description	
Estimated Study Time	0,5 hour
Description of the 4th Learning Object	
Title of LO	Differentiating Probability and Non-Probability Sampling Methods
Learning Outcomes	LO2
Language	English
Type	Self-assessment





Supporting Resources (Bibliography/ Webography)	Presentation Doctoral Study Program Textbook
Content of Learning Object	
<p><i>Please indicate whether each of the following statements is "True" or "False."</i></p> <p>True/False: In probability sampling, every member of the population has an equal chance of being included in the sample. Correct Answer: True</p> <p>True/False: Convenience sampling is an example of probability sampling. Correct Answer: False</p> <p>True/False: Non-probability sampling methods are generally considered more representative of the population compared to probability sampling. Correct Answer: False</p> <p>True/False: Stratified sampling is a type of non-probability sampling method. Correct Answer: False</p> <p>True/False: Random sampling is a common technique used in probability sampling. Correct Answer: True</p> <p>True/False: In quota sampling, researchers deliberately select participants based on specific characteristics to ensure representativeness. Correct Answer: True</p> <p>True/False: Snowball sampling is a probability sampling method often used in large-scale surveys. Correct Answer: False</p> <p>True/False: Probability sampling methods are more suitable when a researcher wants to make statistical inferences about a population. Correct Answer: True</p> <p>True/False: Purposive sampling is an example of a probability sampling method. Correct Answer: False</p> <p>True/False: Non-probability sampling methods are less vulnerable to sampling bias compared to probability sampling. Correct Answer: False</p>	

5th Educational Activity





Title of EA	Additional readings (optional)
Description	<p>Additional reading covering the theory discussed:</p> <p>Groves, R. M. (2006). Nonresponse rates and nonresponse bias in household surveys. <i>International Journal of Public Opinion Quarterly</i>, 70(5), 646-675.</p> <p>Lavrakas, P. J. (2008). <i>Encyclopedia of survey research methods</i>. Sage publications.</p> <p>Molenberghs, G. (2010). <i>Survey methods & sampling techniques</i>. <i>Interuniversity Institute for Biostatistics and statistical Bioinformatics (I-BioStat)</i>, 31(2), 12-34.</p> <p>Nielsen, M., Haun, D., Kärtner, J., & Legare, C. H. (2017). The persistent sampling bias in developmental psychology: A call to action. <i>Journal of Experimental Child Psychology</i>, 162, 31-38.</p> <p>Gray, K., & Keeney, J. E. (2015). Impure or just weird? Scenario sampling bias raises questions about the foundation of morality. <i>Social Psychological and Personality Science</i>, 6(8), 859-868.</p> <p>Cheon, B. K., Melani, I., & Hong, Y. Y. (2020). How USA-centric is psychology? An archival study of implicit assumptions of generalizability of findings to human nature based on origins of study samples. <i>Social Psychological and Personality Science</i>, 11(7), 928-937.</p> <p>Van Aert, R. C., Wicherts, J. M., & Van Assen, M. A. (2019). Publication bias examined in meta-analyses from psychology and medicine: A meta-meta-analysis. <i>PloS one</i>, 14(4), e0215052.</p> <p>Newman, A., Bavik, Y. L., Mount, M., & Shao, B. (2021). Data collection via online platforms: Challenges and recommendations for future research. <i>Applied Psychology</i>, 70(3), 1380-1402.</p>
Estimated Study Time	17 hours
Description of the 5 th Learning Object	
Title of LO	Additional readings (indicative)





Learning Outcomes	LO1-LO6
Language	English
Type	Theory
Supporting Resources (Bibliography/ Webography)	--
Content of Learning Object	
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6 th Educational Activity	
Title of EA	Suggested videos
Description	<p><i>You can visit the links below for watching videos related with this unit:</i></p> <ul style="list-style-type: none"> <i>The Hidden Biases in WEIRD Psychology Research:</i> https://www.youtube.com/watch?v=Ho6OIPrD7sA&t=130s&ab_channel=SciShowPsych
Estimated Study Time	15 minutes
Description of the 6 th Learning Object	
Title of LO	Suggested videos
Learning Outcomes	LO1-LO6
Language	English
Type	Theory
Supporting Resources (Bibliography/ Webography)	--
Content of Learning Object	
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7th Educational Activity	
Title of EA	Sampling methods (forum discussion)
Description	<i>This forum discussion will provide an opportunity for participants to apply their knowledge of sampling methods and critically assess their impact on the validity and generalizability of research findings in various fields of psychology.</i>
Estimated Study Time	5 hours
Description of the 7th Learning Object	
Title of LO	<i>Evaluating Sampling Methods and Their Impact on Research Findings</i>
Learning Outcomes	LO1-LO6
Language	English
Type	Application
Supporting Resources (Bibliography/ Webography)	---
Content of Learning Object	
Discussion Topic: Evaluating Sampling Methods and Their Impact on Research Findings	
Instructions: <i>In this forum discussion, we will explore the crucial role that sampling methods play in research and how they can influence the validity and generalizability of research findings.</i>	
Please follow these steps:	
<ul style="list-style-type: none"> • Initial Post: <i>Share a research study from your field of interest that you believe exemplifies a specific sampling method. Provide a brief description of the study, the sampling method used, and the key findings.</i> • Critique Validity: <i>Evaluate the validity of the chosen sampling method in the study you shared. Discuss whether the sampling method is appropriate for the research question and objectives. Consider factors such as selection bias, randomization, and representativeness.</i> • Critique Generalizability: <i>Discuss the extent to which the study's findings can be generalized to a broader population. Are there limitations in terms of external validity or generalizability due to the chosen sampling method?</i> 	





- **Respond to Others:** Engage with your peers by responding to at least two posts. Provide constructive feedback on their chosen studies, sampling methods, and the validity and generalizability of their findings.
- **Reflect and Conclude:** In your final post, reflect on the discussions and insights gained. Share any key takeaways regarding the importance of sampling methods in research and how they can impact the trustworthiness and applicability of research findings.

Remember to support your arguments with references to relevant literature or research methodology concepts. Feel free to ask questions and encourage thoughtful discussions among your peers.





7th LEARNING UNIT OUTLINE

Overview of the Learning Unit

Study Week	<i>7th Week</i>
Title	Quantitative Research
LU Description	This lesson provides an in-depth exploration of quantitative research methods in psychology. Quantitative research is a systematic approach to studying psychological phenomena using numerical data and statistical analysis. In this lesson, we will delve into the fundamental principles, methodologies, and techniques of quantitative research, empowering students to design, conduct, and interpret quantitative studies effectively.
Concepts – Keywords	Quantitative Data, Hypothesis Testing, Variables, Surveys and Questionnaires, Experimental Design, Statistical Analysis, Descriptive Statistics, Inferential Statistics, Sampling, Regression Analysis, Validity and Reliability.
Learning Outcomes	<ol style="list-style-type: none"> 1. Describe the fundamental principles of quantitative research, including key terms and concepts, 2. Explain the purpose of quantitative research and its role in advancing psychological knowledge, 3. Apply appropriate quantitative research methodologies and statistical techniques to analyze data and address research questions, 4. Evaluate the strengths and limitations of quantitative research designs and statistical methods, 5. Develop research hypotheses and design a quantitative research study, considering variables, data collection methods, and analysis, 6. Critique the validity and reliability of quantitative research findings, and assess their relevance and generalizability to real-world contexts.
Evaluation of LO	<i>LOs not directly assessed</i>
Strategies/ Teaching Techniques	<i>Presentation (theory), activities, case studies, self-assessment, video, group discussion</i>





Estimated Study Time	27,5 hours
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Detailed Description of Educational Activities and Learning Objects

1st Educational Activity	
Title of EA	Study Material (core bibliography)
Description	<i>Study the presentation file titled “Quantitative Research” which briefly presents the fundamental principles, methodologies, and techniques of quantitative research.</i>
Estimated Study Time	5hours
Description of the 1st Learning Object	
Title of LO	<i>Study Material</i>
Learning Outcomes	<i>L.O. 1-6</i>
Language	English
Type	Theory, Presentation of theory
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
Introduction to Advanced Research Methods.pptx, Statistics pptx	

2nd Educational Activity	
Title of EA	Hypothesis Development and Research Design (application)
Description	<i>In this activity, students will work in small groups to formulate research hypotheses and design a quantitative research study on a specific psychological topic. They will consider variables, data collection methods, and analysis techniques to create a comprehensive research plan.</i>





Estimated Study Time	2hour
Description of the 2nd Learning Object	
Title of LO	Hypothesis Development and Research Design
Learning Outcomes	LO1 – LO6
Language	English
Type	Theory Application
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
Activity1. Hypothesis Development and Research Design.docx.	

3rd Educational Activity	
Title of EA	Research Proposal Development (application of theory)
Description	<i>Presentation of the final project</i>
Estimated Study Time	0,5 hours
Description of the 3rd Learning Object	
Title of LO	Research Proposal Development
Learning Outcomes	LO1-LO6
Language	English
Type	Individual Work
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook
Content of Learning Object	





Final Project.docx

4th Educational Activity	
Title of EA	Measurements in Psychological Research (self-assessment)
Description	
Estimated Study Time	0,5 hour
Description of the 4th Learning Object	
Title of LO	Measurements in Psychological Research
Learning Outcomes	LO1-LO6
Language	English
Type	Self-assessment
Supporting Resources (Bibliography/ Webography)	Presentation Doctoral Study Program Textbook
Content of Learning Object	
<p>Please read each question carefully and select the most appropriate answer. Choose the option that you believe is correct for each question. After answering all the questions, check your responses against the provided correct answers to assess your understanding of quantitative research concepts, including research hypotheses, variables, and statistics. Good luck!</p> <p>Question 1: What is the primary purpose of a research hypothesis? a) To summarize existing research b) To describe the research methods used c) To provide a clear and testable statement about the expected relationship between variables d) To report the results of the study</p> <p>Correct Answer: c)</p> <p>Question 2: In a quantitative research study, what are independent variables? a) The variables that are manipulated or controlled by the researcher b) The variables that are measured or observed c) The variables that are used for descriptive statistics d) The variables that are influenced by participant characteristics</p>	





Correct Answer: a)

Question 3: What is the role of a control group in experimental research?

- a) To provide a comparison group that does not receive the experimental treatment
- b) To control the demographic characteristics of participants
- c) To ensure the participants are unaware of the research objectives
- d) To collect background information about participants

Correct Answer: a)

Question 4: Which of the following is a dependent variable in a study examining the effect of a new teaching method on student performance?

- a) The teaching method
- b) Student performance
- c) The teacher's qualifications
- d) The location of the study

Correct Answer: b)

Question 5: When designing a research study, what is the population?

- a) The sample of participants who actually participate in the study
- b) The group of people or cases the researcher is interested in studying
- c) The location where the research will take place
- d) The variables being measured in the study

Correct Answer: b)

Question 6: Which of the following is an example of a quantitative research method?

- a) Conducting in-depth interviews with participants
- b) Observing behavior in a naturalistic setting
- c) Administering surveys with closed-ended questions
- d) Analyzing the content of written documents

Correct Answer: c)

Question 7: What does statistical significance indicate in research findings?

- a) The practical importance of the findings
- b) The likelihood that the findings occurred by chance
- c) The sample size used in the study
- d) The generalizability of the findings to the population

Correct Answer: b)

Question 8: What is the primary purpose of descriptive statistics in research?

- a) To determine the statistical significance of research findings
- b) To summarize and describe the main characteristics of data
- c) To make predictions about future research outcomes





d) To compare two or more independent variables

Correct Answer: b)

Question 9: Which of the following is an example of descriptive statistics?

- a) Conducting hypothesis tests
- b) Calculating means and standard deviations
- c) Drawing conclusions about the population based on a sample
- d) Using correlation analysis to examine relationships between variables

Correct Answer: b)

Question 10: In a research study, a researcher conducts hypothesis tests to determine whether there is a statistically significant difference between two groups. What type of statistics is the researcher using?

- a) Descriptive statistics
- b) Inferential statistics
- c) Qualitative statistics
- d) Cross-sectional statistics

Correct Answer: b)

5 th Educational Activity	
Title of EA	Additional readings (optional)
Description	<p>Additional reading covering the theory discussed:</p> <p>Appelbaum, M., Cooper, H., Kline, R. B., Mayo-Wilson, E., Nezu, A. M., & Rao, S. M. (2018). Journal article reporting standards for quantitative research in psychology: The APA Publications and Communications Board task force report. <i>American Psychologist</i>, 73(1), 3</p> <p>Bauer, G. R., Churchill, S. M., Mahendran, M., Walwyn, C., Lizotte, D., & Villa-Rueda, A. A. (2021). Intersectionality in quantitative research: A systematic review of its emergence and applications of theory and methods. <i>SSM-population health</i>, 14, 100798.</p> <p>Zyphur, M. J., & Pierides, D. C. (2020). Statistics and probability have always been value-laden: An historical ontology of quantitative research methods. <i>Journal of Business Ethics</i>, 167, 1-18.</p>





	<p><i>Bauer, G. R., & Scheim, A. I. (2019). Methods for analytic intercategory intersectionality in quantitative research: discrimination as a mediator of health inequalities. Social Science & Medicine, 226, 236-245.</i></p> <p><i>Wiggins, B. J., & Christopherson, C. D. (2019). The replication crisis in psychology: An overview for theoretical and philosophical psychology. Journal of Theoretical and Philosophical Psychology, 39(4), 202.</i></p>
Estimated Study Time	17hours
Description of the 5 th Learning Object	
Title of LO	Additional readings (indicative)
Learning Outcomes	LO1-LO6
Language	English
Type	Theory
Supporting Resources (Bibliography/ Webography)	<p>Designing Research Methods to Test Complex Issues: https://www.apa.org/education-career/guide/subfields/quantitative</p> <p>Pursuing a Career in Quantitative Psychology: https://www.apa.org/education-career/guide/subfields/quantitative/education-training</p>
Content of Learning Object	
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7 th Educational Activity	
Title of EA	Create an online survey (theory application)
Description	<i>For the research design during Activity 1, use Google forms to create an online study. Consider your research questions and analyses proposed and ensure that your questionnaires are appropriate.</i>
Estimated Study Time	2,5 hours





Description of the 7 th Learning Object	
Title of LO	Online Survey
Learning Outcomes	LO1-LO6
Language	English
Type	Application
Supporting Resources (Bibliography/ Webography)	https://docs.google.com/forms/u/0/
Content of Learning Object	
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8th LEARNING UNIT OUTLINE

Overview of the Learning Unit

Study Week	8 th Week
Title	Qualitative Research
LU Description	This lesson provides an introduction to qualitative research methods in psychology. Qualitative research is a valuable approach for exploring complex phenomena, understanding human experiences, and gaining insights into subjective aspects of behavior and cognition. In this lesson, students will delve into the foundational principles, techniques, and ethical considerations associated with qualitative research. They will explore the various data collection methods, data analysis techniques, and the role of the researcher in qualitative inquiry.
Concepts – Keywords	Qualitative Research, Phenomenology, Grounded Theory, Ethnography, Case Study, Interviews, Focus Groups, Participant Observation, Coding and Categorization,





	Data Saturation, Reflexivity, Exploration, Context, Subjectivity, Inductive, Emergent, Themes, Interpretation Validity, Rigor.
Learning Outcomes	<ol style="list-style-type: none"> 1. Describe the fundamental principles of qualitative research, 2. Explain the key differences between qualitative and quantitative research approaches, 3. Demonstrate an understanding of various qualitative data collection methods and their appropriate use in research contexts, 4. Analyze qualitative data through coding, categorization, and theme development, 5. Evaluate the ethical considerations involved in qualitative research, including informed consent and confidentiality, 6. Develop a basic qualitative research proposal, outlining research questions, data collection methods, and data analysis approaches.
Evaluation of LO	<i>LOs not directly assessed</i>
Strategies/ Teaching Techniques	<i>Presentation (theory), activities, case studies, self-assessment, video, group discussion</i>
Estimated Study Time	<i>35,5 hours</i>

Detailed Description of Educational Activities and Learning Objects

1st Educational Activity	
Title of EA	Study Material (core bibliography)
Description	<i>Study the presentation file titled “Qualitative Research” which briefly presents an introduction to qualitative research methods in psychology.</i>
Estimated Study Time	5hours
Description of the 1st Learning Object	
Title of LO	<i>Study Material</i>





Learning Outcomes	L.O. 1-6
Language	English
Type	Theory, Presentation of theory
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	

2nd Educational Activity	
Title of EA	Qualitative Research Design (application)
Description	<i>This activity allows students to actively apply their knowledge of qualitative research principles by designing a qualitative study on a topic of their choice. It also fosters critical thinking about the appropriateness of qualitative methods for different research questions and the ethical responsibilities of researchers in qualitative studies.</i>
Estimated Study Time	2hour
Description of the 2nd Learning Object	
Title of LO	Qualitative Research Design
Learning Outcomes	LO1 – LO6
Language	English
Type	Theory Application
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
Activity1. Qualitative Research Design.docx.	





3rd Educational Activity	
Title of EA	Qualitative Data Analysis (application of theory)
Description	<i>This activity provides practical experience in qualitative data analysis while connecting it to real-world events</i>
Estimated Study Time	2 hours
Description of the 3rd Learning Object	
Title of LO	Qualitative Data Analysis Workshop with Newspaper Headlines
Learning Outcomes	LO4
Language	English
Type	Workshop, Group work
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
Activity 2. Qualitative Data Analysis Workshop with Newspaper Headlines.docx	

4th Educational Activity	
Title of EA	Qualitative Data Collection Methods (short answer questions)
Description	<i>Below you will find five research ideas. Please choose the appropriate qualitative method to use for each study and justify your answer.</i>
Estimated Study Time	1 hour
Description of the 4th Learning Object	
Title of LO	Qualitative Data Collection Methods
Learning Outcomes	LO3





Language	English
Type	Self-assessment
Supporting Resources (Bibliography/ Webography)	Presentation Doctoral Study Program Textbook
Content of Learning Object	
<p>Below you will find five research ideas. Please choose the appropriate qualitative data collection method to use for each study and justify your answer.</p> <p><i>Scenario 1: Exploring the Experiences of First-Generation Immigrants</i></p> <p>Indicative answer: In-depth Interviews Justification: In-depth interviews allow for open-ended exploration of individuals' experiences, perspectives, and challenges. They provide rich, detailed narratives that can uncover the unique journey of first-generation immigrants.</p> <p><i>Scenario 2: Studying Workplace Dynamics in a High-Stress Environment</i></p> <p>Indicative answer: Participant Observation Justification: Participant observation involves the researcher actively participating in the workplace, which is crucial for understanding the dynamics, interactions, and behaviors within the context of a high-stress environment. It allows for the observation of non-verbal cues and subtle social dynamics.</p> <p><i>Scenario 3: Investigating the Impact of a Community Health Program on Residents' Well-being</i></p> <p>Indicative answer: Focus Groups Justification: Focus groups are ideal for exploring participants' perceptions, attitudes, and shared experiences regarding the community health program. They encourage group discussions and interactions, uncovering collective insights.</p> <p><i>Scenario 4: Analyzing Social Media Posts for Sentiment in Political Discussions</i></p> <p>Indicative answer: Content Analysis Justification: Content analysis involves systematically analyzing textual or visual data, making it suitable for studying a large volume of social media posts. It can identify recurring themes, sentiments, and trends within political discussions.</p> <p><i>Scenario 5: Exploring the Role of Family Documents in Shaping Identity</i></p> <p>Indicative answer: Document Analysis Justification: Document analysis involves the examination of written or textual materials, such as family letters, diaries, or historical documents. It is appropriate for investigating how family documents contribute to the construction of identity over time.</p>	





5 th Educational Activity	
Title of EA	Additional readings (optional)
Description	<p>Additional reading covering the theory discussed:</p> <p>OER: Jhangiani, R. S., Chiang, I. C. A., Cuttler, C., & Leighton, D. C. (2019). Research methods in psychology. Kwantlen Polytechnic University.</p> <p>31. Qualitative Research https://kpu.pressbooks.pub/psychmethods4e/chapter/qualitative-research/</p> <p>32 Observational Research https://kpu.pressbooks.pub/psychmethods4e/chapter/observational-research/</p> <p>Pursuing a Career in Quantitative Psychology: https://www.apa.org/education-career/guide/subfields/quantitative/education-training</p> <p>Gough, B., & Lyons, A. (2016). The future of qualitative research in psychology: Accentuating the positive. Integrative Psychological and Behavioral Science, 50, 234-243.</p> <p>Levitt, H. M., Motulsky, S. L., Wertz, F. J., Morrow, S. L., & Ponterotto, J. G. (2017). Recommendations for designing and reviewing qualitative research in psychology: Promoting methodological integrity. Qualitative psychology, 4(1), 2.</p> <p>Levitt, H. M., Morrill, Z., Collins, K. M., & Rizo, J. L. (2021). The methodological integrity of critical qualitative research: Principles to support design and research review. Journal of Counseling Psychology, 68(3), 357.</p> <p>Maxwell, J. A. (2021). The importance of qualitative research for investigating causation. Qualitative Psychology, 8(3), 378.</p> <p>Braun, V., Clarke, V., Boulton, E., Davey, L., & McEvoy, C. (2021). The online survey as a qualitative research tool.</p>





	<i>International journal of social research methodology, 24(6), 641-654.</i> <i>Georgiadou, T., Fotakopoulou, O., & Pnevmatikos, D. (2018). Exploring bioethical reasoning in children and adolescents using focus groups methodology. SAGE Research Methods.</i>
Estimated Study Time	17hours
Description of the 5 th Learning Object	
Title of LO	Additional readings (indicative)
Learning Outcomes	LO1-LO6
Language	English
Type	Theory
Supporting Resources (Bibliography/ Webography)	Grounded Theory: https://www.sciencedirect.com/topics/neuroscience/grounded-theory The Qualitative Research Guidelines Project: http://www.qualres.org/index.html
Content of Learning Object	
Introduction to Advanced Research Methods.pptx	

6 th Educational Activity	
Title of EA	Suggested videos
Description	You can visit the links below for watching videos related with this unit: <ul style="list-style-type: none"> • <i>Essentials of Interpretative Phenomenological Analysis:</i> https://www.youtube.com/watch?v=5YM8Xxs8ucA&ab_channel=AmericanPsychologicalAssociation • <i>Essentials of Existential Phenomenological Research:</i> https://www.youtube.com/watch?v=yxvXqs4R_ic&list=PLxf85IzktYWIRLRFuw5AAQrCwEwR2Sp5e&ab_channel=AmericanPsychologicalAssociation





	<ul style="list-style-type: none"> • <i>Essentials of Thematic Analysis:</i> https://www.youtube.com/watch?v=R1eZGe0uuvY&list=PLxf85IzktYWIRLFuw5AAQrCwEwR2Sp5e&index=9&ab_channel=AmericanPsychologicalAssociation • <i>Essentials of Narrative Analysis:</i> https://www.youtube.com/watch?v=GwqweXJRsbQ&list=PLxf85IzktYWIRLFuw5AAQrCwEwR2Sp5e&index=8&ab_channel=AmericanPsychologicalAssociation • <i>Essentials of Critical Constructivist Grounded Theory Research CCGT:</i> https://www.youtube.com/watch?v=InpBlqmPdXM&list=PLxf85IzktYWIRLFuw5AAQrCwEwR2Sp5e&index=7&ab_channel=AmericanPsychologicalAssociation • <i>Essentials of Autoethnography:</i> https://www.youtube.com/watch?v=Mp2q89DbCj4&list=PLxf85IzktYWIRLFuw5AAQrCwEwR2Sp5e&index=6&ab_channel=AmericanPsychologicalAssociation • <i>Essentials of Descriptive-Interpretive Qualitative Research:</i> https://www.youtube.com/watch?v=uewIAX4Xqwo&list=PLxf85IzktYWIRLFuw5AAQrCwEwR2Sp5e&index=5&ab_channel=AmericanPsychologicalAssociation • <i>Essentials of Ideal-Type Analysis:</i> https://www.youtube.com/watch?v=uTXky4C6Je4&list=PLxf85IzktYWIRLFuw5AAQrCwEwR2Sp5e&index=4&ab_channel=AmericanPsychologicalAssociation • <i>How to Conduct a Consensual Qualitative Research – Essentials of Qualitative Methods Series:</i> https://www.youtube.com/watch?v=WZSkRfF4uUk&list=PLxf85IzktYWIRLFuw5AAQrCwEwR2Sp5e&index=3&ab_channel=AmericanPsychologicalAssociation
Estimated Study Time	9 hours
Description of the 6 th Learning Object	





Title of LO	Suggested videos
Learning Outcomes	LO1-LO6
Language	English
Type	Theory
Supporting Resources (Bibliography/ Webography)	--
Content of Learning Object	
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7th Educational Activity	
Title of EA	Create an online qualitative study (theory application)
Description	<i>For the research idea you chose during Activity 1, use Google forms to create an online questionnaire. Consider your research questions in order to be open-ended and to be analyzed using thematic analysis.</i>
Estimated Study Time	2,5 hours
Description of the 7th Learning Object	
Title of LO	Online Survey
Learning Outcomes	LO1-LO6
Language	English
Type	Application
Supporting Resources (Bibliography/ Webography)	https://docs.google.com/forms/u/0/
Content of Learning Object	
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9th LEARNING UNIT OUTLINE

Overview of the Learning Unit

Study Week	<i>9th Week</i>
Title	Mix Methods Design
LU Description	This lesson explores the concept of mixed methods research, which involves combining both qualitative and quantitative research methods within a single research study. Students will gain an understanding of the fundamental principles, advantages, and challenges associated with mixed methods research designs. They will learn how to select appropriate research questions for mixed methods studies, integrate qualitative and quantitative data, and draw meaningful conclusions.
Concepts – Keywords	Mixed methods research, Qualitative research, Quantitative research, Research questions, Data integration, Triangulation, Data collection, Data analysis, Validity, Reliability
Learning Outcomes	<ol style="list-style-type: none"> 1. Describe the key characteristics of mixed methods research and differentiate between qualitative and quantitative data, 2. Explain the advantages and challenges of using mixed methods designs in research, 3. Select appropriate research questions and data collection methods for a mixed methods study, 4. Evaluate the process of integrating qualitative and quantitative data to address research objectives, 5. Design a mixed methods research plan that includes data collection, analysis, and interpretation, 6. Assess the validity and reliability of findings obtained from mixed methods research.
Evaluation of LO	<i>LOs not directly assessed</i>
Strategies/ Teaching Techniques	<i>Presentation (theory), activities, case studies, self-assessment, video, group discussion</i>
Estimated Study Time	<i>35,5 hours</i>





Detailed Description of Educational Activities and Learning Objects

1 st Educational Activity	
Title of EA	Study Material (core bibliography)
Description	<i>Study the presentation file titled "Mix Methods Design" which briefly presents the concept of mixed methods research, which involves combining both qualitative and quantitative research methods within a single research study.</i>
Estimated Study Time	5hours
Description of the 1 st Learning Object	
Title of LO	Study Material
Learning Outcomes	L.O. 1-6
Language	English
Type	Theory, Presentation of theory
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
Statistics pptx.	

2 nd Educational Activity	
Title of EA	Mix Methods Design (application)
Description	<i>In this activity, students will work in small groups to develop research questions suitable for a mixed methods study. They will also identify appropriate data collection methods for each research question, considering both qualitative and quantitative approaches.</i>
Estimated Study Time	1hour





Description of the 2 nd Learning Object	
Title of LO	Designing Mixed Methods Research Questions
Learning Outcomes	LO3, LO5
Language	English
Type	Theory Application
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
Activity1. Designing Mixed Methods Research Questions.docx.	

3 rd Educational Activity	
Title of EA	Advantages and Challenges of Mixed Methods Research (group discussion)
Description	<i>This activity is designed to help students explore and discuss the advantages and challenges of using mixed methods designs in research. Through group discussions, students will gain a deeper understanding of when and why researchers choose mixed methods, as well as the potential issues they may encounter.</i>
Estimated Study Time	1 hours
Description of the 3 rd Learning Object	
Title of LO	Advantages and Challenges of Mixed Methods Research
Learning Outcomes	LO2, LO6
Language	English
Type	Workshop, Group discussion
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation





Content of Learning Object
Activity 2. Advantages and Challenges of Mixed Methods Research.docx

4th Educational Activity	
Title of EA	Self-assessment (multiple choice questions, true-false statement, short answer questions)
Description	
Estimated Study Time	1 hour
Description of the 4th Learning Object	
Title of LO	Mix Design Methods
Learning Outcomes	
Language	English
Type	Self-assessment
Supporting Resources (Bibliography/ Webography)	Presentation Doctoral Study Program Textbook
Content of Learning Object	

5th Educational Activity	
Title of EA	Additional readings (optional)
Description	<i>Additional reading covering the theory discussed:</i> Levitt, H. M., Bamberg, M., Creswell, J. W., Frost, D. M., Josselson, R., & Suárez-Orozco, C. (2018). Journal article reporting standards for qualitative primary, qualitative meta-analytic, and mixed methods research in psychology: The APA Publications and Communications Board task force report. American Psychologist, 73(1), 26.





	<p>Fassinger, R., & Morrow, S. L. (2013). <i>Toward best practices in quantitative, qualitative, and mixed-method research: A social justice perspective. Journal for Social Action in Counseling & Psychology, 5(2), 69-83.</i></p> <p>Gough, B., & Lyons, A. (2016). <i>The future of qualitative research in psychology: Accentuating the positive. Integrative Psychological and Behavioral Science, 50, 234-243.</i></p> <p>Turner, S. F., Cardinal, L. B., & Burton, R. M. (2017). <i>Research design for mixed methods: A triangulation-based framework and roadmap. Organizational Research Methods, 20(2), 243-267.</i></p> <p>Fetters, M. D., Curry, L. A., & Creswell, J. W. (2013). <i>Achieving integration in mixed methods designs—principles and practices. Health services research, 48(6pt2), 2134-2156.</i></p> <p>Creswell, J. W. (2013). <i>Steps in conducting a scholarly mixed methods study.</i></p> <p>Shannon-Baker, P. (2016). <i>Making paradigms meaningful in mixed methods research. Journal of mixed methods research, 10(4), 319-334.</i></p> <p>Heyvaert, M., Maes, B., & Onghena, P. (2013). <i>Mixed methods research synthesis: definition, framework, and potential. Quality & Quantity, 47, 659-676.</i></p> <p>Best Practices for Mixed Methods Research in the Health Sciences: https://obssr.od.nih.gov/sites/obssr/files/Best_Practices_for_Mixed_Methods_Research.pdf</p>
Estimated Study Time	17hours
Description of the 5th Learning Object	
Title of LO	Additional readings (indicative)
Learning Outcomes	LO1-LO6
Language	English





Type	Theory
Supporting Resources (Bibliography/ Webography)	Mixed Methods Research: https://catalyst.harvard.edu/community-engagement/mmr/
Content of Learning Object	
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6 th Educational Activity	
Title of EA	Suggested videos
Description	<p>You can visit the links below for watching videos related with this unit:</p> <ul style="list-style-type: none"> • <i>Introduction to Designing & Conducting Mixed Methods Research (Online course introducing participants to mixed methods research in the health sciences):</i> https://catalyst.harvard.edu/courses/mmr-online/ • <i>THE MIXED METHODS RESEARCH INTEGRATION TRILOGY:</i> https://www.mixedmethods.org/videos.html • <i>THE MIXED METHODS RESEARCH SERIES AT HARVARD'S SCHOOL OF PUBLIC HEALTH:</i> https://www.mixedmethods.org/videos.html • <i>Implementation of Mixed Methods Research Using a Community-Based Participatory Research Approach:</i> https://www.youtube.com/watch?v=ZULOfGNfMaI&ab_channel=FAMMEDYouTube
Estimated Study Time	9 hours
Description of the 6 th Learning Object	





Title of LO	Suggested videos
Learning Outcomes	LO1-LO6
Language	English
Type	Theory
Supporting Resources (Bibliography/ Webography)	--
Content of Learning Object	
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7th Educational Activity	
Title of EA	Advantages and Challenges of Mixed Methods Research (Case studies)
Description	<i>These case studies represent real-world scenarios where mixed methods research can provide a more comprehensive understanding of complex phenomena. Students should carefully plan how to combine quantitative and qualitative data to address their specific research questions and challenges.</i>
Estimated Study Time	1 hour
Description of the 7th Learning Object	
Title of LO	Advantages and Challenges of Mixed Methods Research_Case studies
Learning Outcomes	LO1-LO6
Language	English
Type	Group discussion
Supporting Resources (Bibliography/ Webography)	--
Content of Learning Object	
<i>Activity 3. Case studies_Forum discussion.docx</i>	





10th LEARNING UNIT OUTLINE

Overview of the Learning Unit

Study Week	10 th Week
Title	Statistical Analysis Techniques, Interpretation of Results I
LU Description	This lesson provides a comprehensive introduction to various statistical analysis techniques commonly used in psychological research. Students will explore the fundamental concepts and applications of statistical methods, including descriptive statistics, inferential statistics, non-parametric tests, and analysis of variance (ANOVA). Additionally, the lesson introduces the critical skill of interpreting research results obtained through these statistical techniques. Students will learn how to translate statistical findings into meaningful insights, draw conclusions, and communicate their interpretations effectively.
Concepts – Keywords	Descriptive statistics, inferential statistics, non-parametric tests, ANOVA, interpretation of results.
Learning Outcomes	<ol style="list-style-type: none"> 1. Describe the key concepts and principles of foundational statistical analysis techniques, 2. Explain the applications and significance of these statistical methods in psychological research, 3. Analyze statistical results critically and begin the process of interpreting research findings, 4. Synthesize statistical findings with research objectives to form preliminary interpretations, 5. Evaluate the clarity and effectiveness of initial result interpretations.
Evaluation of LO	<i>LOs not directly assessed</i>
Strategies/ Teaching Techniques	<i>Presentation (theory), activities, case studies, self-assessment, video, group discussion</i>
Estimated Study Time	<i>35,5 hours</i>





Detailed Description of Educational Activities and Learning Objects

1st Educational Activity	
Title of EA	Study Material (core bibliography)
Description	<i>Study the presentation file titled “Statistical Analysis Techniques, Interpretation of Results I” which briefly presents an introduction to various statistical analysis techniques commonly used in psychological research, including descriptive statistics, inferential statistics, non-parametric tests, and analysis of variance (ANOVA).</i>
Estimated Study Time	5hours
Description of the 1st Learning Object	
Title of LO	<i>Study Material</i>
Learning Outcomes	<i>L.O. 1-6</i>
Language	English
Type	Theory, Presentation of theory
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
Statistics.pptx	

2nd Educational Activity	
Title of EA	Presenting descriptive statistics (application)*
Description	<i>In a classic study[†], men and women rated the importance of physical attractiveness in both a short-term mate and a long-term mate (Buss & Schmitt,</i>

* Exercise from <https://kpu.pressbooks.pub/psychmethods4e/chapter/key-takeaways-and-exercises-11/>

[†] Buss, D. M., & Schmitt, D. P. (1993). Sexual strategies theory: A contextual evolutionary analysis of human mating. *Psychological Review*, 100, 204–232.





	<p>1993)[2]. The means and standard deviations are as follows. Men / Short Term: $M = 5.67, SD = 2.34$; Men / Long Term: $M = 4.43, SD = 2.11$; Women / Short Term: $M = 5.67, SD = 2.48$; Women / Long Term: $M = 4.22, SD = 1.98$. Present these results</p> <ul style="list-style-type: none"> • in writing • in a figure • in a table
Estimated Study Time	0,5 hour
Description of the 2nd Learning Object	
Title of LO	Designing Mixed Methods Research Questions
Learning Outcomes	LO1- LO3
Language	English
Type	Theory Application
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
<p>In a classic study[‡], men and women rated the importance of physical attractiveness in both a short-term mate and a long-term mate (Buss & Schmitt, 1993)[2]. The means and standard deviations are as follows. Men / Short Term: $M = 5.67, SD = 2.34$; Men / Long Term: $M = 4.43, SD = 2.11$; Women / Short Term: $M = 5.67, SD = 2.48$; Women / Long Term: $M = 4.22, SD = 1.98$. Present these results</p> <ul style="list-style-type: none"> • in writing • in a figure • in a table 	

3rd Educational Activity	
Title of EA	Descriptive statistics (application)

[‡] Buss, D. M., & Schmitt, D. P. (1993). Sexual strategies theory: A contextual evolutionary analysis of human mating. *Psychological Review*, 100, 204–232.





Description	<i>Make a frequency table and histogram for the following data: 13, 5, 7, 18, 6, 11, 16, 16, 13, 16, 13, 4, 14, 14, 17, 15, 15, 18, 12, 12 For this data compute the mean, median, mode, standard deviation, and range.</i>
Estimated Study Time	1 hours
Description of the 3rd Learning Object	
Title of LO	Descriptive Statistics
Learning Outcomes	LO1 – LO3
Language	English
Type	Theory Application
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
<i>Make a frequency table and histogram for the following data: 13, 5, 7, 18, 6, 11, 16, 16, 13, 16, 13, 4, 14, 14, 17, 15, 15, 18, 12, 12 For this data compute the mean, median, mode, standard deviation, and range.</i>	

4th Educational Activity	
Title of EA	Self-assessment (multiple choice questions, true-false statement, short answer questions)
Description	
Estimated Study Time	1 hour
Description of the 4th Learning Object	
Title of LO	Statistical Analysis Techniques, Interpretation of Results I
Learning Outcomes	
Language	English
Type	Self-assessment





Supporting Resources (Bibliography/ Webography)	Presentation Doctoral Study Program Textbook
Content of Learning Object	

5th Educational Activity	
Title of EA	Additional readings (optional)
Description	<p>Additional reading covering the theory discussed:</p> <p>OER: Jhangiani, R. S., Chiang, I. C. A., Cuttler, C., & Leighton, D. C. (2019). Research methods in psychology. Kwantlen Polytechnic University.</p> <p>Chapter XII: Descriptive Statistics https://kpu.pressbooks.pub/psychmethods4e/part/descriptive-statistics/</p> <p>Chapter XIII: Inferential Statistics https://kpu.pressbooks.pub/psychmethods4e/part/inferential-statistics/</p> <p>Statistical Thinking: https://nobaproject.com/textbooks/psychology-as-a-social-science/modules/statistical-thinking</p> <p>The Replication Crisis in Psychology: https://nobaproject.com/modules/the-replication-crisis-in-psychology</p> <p><i>Wiggins, B. J., & Christopherson, C. D. (2019). The replication crisis in psychology: An overview for theoretical and philosophical psychology. Journal of Theoretical and Philosophical Psychology, 39(4), 202.</i></p> <p><i>Shrout, P. E., & Rodgers, J. L. (2018). Psychology, science, and knowledge construction: Broadening perspectives from the replication crisis. Annual review of psychology, 69, 487-510.</i></p>





	<p><i>Maxwell, S. E., Lau, M. Y., & Howard, G. S. (2015). Is psychology suffering from a replication crisis? What does “failure to replicate” really mean?. American Psychologist, 70(6), 487.</i></p> <p><i>Schooler, J. W. (2014). Metascience could rescue the ‘replication crisis’. Nature, 515(7525), 9-9.</i></p>
Estimated Study Time	17hours
Description of the 5th Learning Object	
Title of LO	Additional readings (indicative)
Learning Outcomes	LO1-LO6
Language	English
Type	Theory
Supporting Resources (Bibliography/ Webography)	
Content of Learning Object	
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6th Educational Activity	
Title of EA	Suggested videos
Description	<p><i>You can visit the links below for watching videos related with this unit:</i></p> <ul style="list-style-type: none"> <i>Advanced Statistics (a list for videos and tutorial covering most of the analyses in different statistical software (spss, jasp, excel, R):</i> https://statisticsofdoom.com/page/advanced-statistics/ <i>A Simple and Quick Way... (SPSS Tutorials):</i> https://www.youtube.com/channel/UCSdBvxXs47ki_ZZxx0uP5gw/videos





Estimated Study Time	9 hours
Description of the 6th Learning Object	
Title of LO	Suggested videos
Learning Outcomes	LO1-LO6
Language	English
Type	Theory
Supporting Resources (Bibliography/ Webography)	--
Content of Learning Object	
--	

7th Educational Activity	
Title of EA	Conducting analyses and interpreting the results (theory application)
Description	<i>In this application of theory, students conduct statistical analyses (t-test, ANOVA) using statistical analyses software, present and interpret the results.</i>
Estimated Study Time	1 hour
Description of the 7th Learning Object	
Title of LO	Conducting analyses and interpreting the results
Learning Outcomes	LO1-LO6
Language	English
Type	Workshop, Group discussion
Supporting Resources (Bibliography/ Webography)	--
Content of Learning Object	
<i>Activity 1. Conducting analyses and interpreting the results.docx</i>	





8th Educational Activity	
Title of EA	Conducting non-parametric tests and interpreting the results (theory application)
Description	<i>In this application of theory, students conduct statistical analyses (t-test, ANOVA) using statistical analyses software, present and interpret the results.</i>
Estimated Study Time	1 hour
Description of the 8th Learning Object	
Title of LO	Conducting non-parametric tests and interpreting the results
Learning Outcomes	LO1-LO6
Language	English
Type	Workshop, Group discussion
Supporting Resources (Bibliography/ Webography)	--
Content of Learning Object	
<i>Activity 2. Conducting non-parametric tests and interpreting the results.docx</i>	

11th LEARNING UNIT OUTLINE

Overview of the Learning Unit

Study Week	<i>11th Week</i>
Title	Statistical Analysis Techniques, Interpretation of Results II
LU Description	In this lesson, students continue their exploration of statistical analysis techniques in psychological research. This part covers advanced methods, including multivariate





	analysis of variance (MANOVA), factor analysis, principal component analysis, cluster analysis, multivariate regression, and Structural Equation Models (SEM). The lesson further develops the skill of interpretation of results, emphasizing the integration of statistical findings with research objectives and theoretical frameworks to draw meaningful conclusions and effectively communicate research outcomes.
Concepts – Keywords	MANOVA, factor analysis, principal component analysis, cluster analysis, multivariate regression, Structural Equation Models (SEM), interpretation of results.
Learning Outcomes	<ol style="list-style-type: none"> 1. Understand advanced statistical analysis techniques and their applications, 2. Explain the significance and complexity of advanced statistical methods in psychological research, 3. Analyze statistical results critically and interpret them in the context of research questions, 4. Synthesize statistical findings with existing literature and research objectives to generate meaningful insights, 5. Evaluate the clarity and effectiveness of result interpretations and their alignment with research objectives.
Evaluation of LO	<i>LOs not directly assessed</i>
Strategies/ Teaching Techniques	<i>Presentation (theory), activities, case studies, self-assessment, video, group discussion</i>
Estimated Study Time	<i>35,5 hours</i>

Detailed Description of Educational Activities and Learning Objects

1 st Educational Activity	
Title of EA	Study Material (core bibliography)
Description	<i>Study the presentation file titled “Statistical Analysis Techniques, Interpretation of Results II” which briefly presents advanced methods, including multivariate analysis of variance (MANOVA), factor analysis, principal component analysis, cluster analysis, multivariate regression, and Structural Equation Models (SEM).</i>





Estimated Study Time	5hours
Description of the 1st Learning Object	
Title of LO	<i>Study Material</i>
Learning Outcomes	<i>L.O. 1-5</i>
Language	English
Type	Theory, Presentation of theory
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
Statistics.pptx	

2nd Educational Activity	
Title of EA	MANOVA (application)
Description	<i>Apply Multivariate Analysis of Variance (MANOVA) to a dataset and interpret the results.</i>
Estimated Study Time	1 hour
Description of the 2nd Learning Object	
Title of LO	MANOVA application
Learning Outcomes	LO1- LO3
Language	English
Type	Theory Application
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	





Instructions:

- Go to <https://github.com/doomlab/statsofdoom-files/blob/master/advanced/SPSS/Assignments/9%20MANOVA.sav> and download the .sav file
- **Research Question:**[§]
- Dogs were trained to perform basic tricks. Is one training method better than the other when examining an overall performance (correctness/length of learning time)? Is there an interaction between number of training sessions and method?
- IVs
- Training: clicker versus traditional training
- Number of sessions: 5, 10, 15 sessions
- DVs
- Correct: number of correct actions
- Delay: how long it took before they learned the trick
- Perform a MANOVA analysis to examine the effects of the independent variables on the dependent variables.
- Report and interpret the MANOVA results, including Wilks' Lambda, Pillai's Trace, Hotelling's Trace, and Roy's Largest Root.

3 rd Educational Activity	
Title of EA	Factor Analysis and Principal Component Analysis (PCA) (application)
Description	Explore the use of Factor Analysis and Principal Component Analysis (PCA) in data reduction and pattern discovery.
Estimated Study Time	1 hours
Description of the 3 rd Learning Object	
Title of LO	Factor Analysis and Principal Component Analysis (PCA)
Learning Outcomes	LO1 – LO3
Language	English

[§] Data set retrieved from Open Educational Resources <https://github.com/doomlab/statsofdoom-files/blob/master/advanced/SPSS/Assignments/9%20MANOVA.sav>





Type	Theory Application
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
<p><i>Instructions:</i></p> <ul style="list-style-type: none"> • Go to https://stats.oarc.ucla.edu/spss/seminars/efa-spss/ and download the .sav file. • Perform both Factor Analysis and PCA on the same dataset • Compare and contrast the results of Factor Analysis and PCA, noting differences in dimensionality reduction and interpretation • Interpret the rotated factor loadings (in Factor Analysis) and principal components (in PCA) 	

4 th Educational Activity	
Title of EA	Self-assessment (multiple choice questions, true-false statement, short answer questions)
Description	
Estimated Study Time	1 hour
Description of the 4 th Learning Object	
Title of LO	Statistical Analysis Techniques, Interpretation of Results II
Learning Outcomes	
Language	English
Type	Self-assessment
Supporting Resources (Bibliography/ Webography)	Presentation Doctoral Study Program Textbook
Content of Learning Object	





5 th Educational Activity	
Title of EA	Additional readings (optional)
Description	<p>Additional reading covering the theory discussed:</p> <p>PRINCIPAL COMPONENTS (PCA) AND EXPLORATORY FACTOR ANALYSIS (EFA) WITH SPSS: https://stats.oarc.ucla.edu/spss/seminars/efa-spss/</p> <p>Cluster Analysis: An Example: https://quantdev.ssri.psu.edu/tutorials/cluster-analysis-example</p> <p>Goss-Sampson, M., van Doorn, J., & Wagenmakers, E. J. (2020). Bayesian inference in JASP: A guide for students.</p> <p>van Doorn, J., van den Bergh, D., Böhm, U., Dablander, F., Derks, K., Draws, T., ... & Wagenmakers, E. J. (2021). The JASP guidelines for conducting and reporting a Bayesian analysis. Psychonomic Bulletin & Review, 28, 813-826.</p> <p>Wagenmakers, E. J., Love, J., Marsman, M., Jamil, T., Ly, A., Verhagen, J., ... & Morey, R. D. (2018). Bayesian inference for psychology. Part II: Example applications with JASP. Psychonomic bulletin & review, 25, 58-76.</p> <p>Goss-Sampson, M. (2019). Statistical analysis in JASP: A guide for students.</p> <p>Learning Statistics with JASP: https://learnstatswithjasp.com/</p> <p>Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., Ray, S., ... & Ray, S. (2021). An introduction to structural equation modeling. Partial least squares structural equation modeling (PLS-SEM) using R: a workbook, 1-29.</p>
Estimated Study Time	17hours
Description of the 5 th Learning Object	





Title of LO	Additional readings (indicative)
Learning Outcomes	LO1-LO6
Language	English
Type	Theory
Supporting Resources (Bibliography/ Webography)	
Content of Learning Object	
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6 th Educational Activity	
Title of EA	Suggested videos
Description	<p><i>You can visit the links below for watching videos related with this unit:</i></p> <ul style="list-style-type: none"> • <i>INTRODUCTION TO STRUCTURAL EQUATION MODELING (SEM) IN R WITH LAVAAN:</i> https://stats.oarc.ucla.edu/r/seminars/rsem/ • <i>Structural Equation Models:</i> https://www.methods.manchester.ac.uk/themes/survey-and-statistical-methods/structural-equation-models/ • <i>PSYC 200 Mini-Lectures:</i> https://www.youtube.com/playlist?list=PLIoZywl_5qG050Ek8ZBvO-nTxqLTQUjHy
Estimated Study Time	9 hours
Description of the 6 th Learning Object	
Title of LO	Suggested videos
Learning Outcomes	LO1-LO6
Language	English





Type	Theory
Supporting Resources (Bibliography/ Webography)	--
Content of Learning Object	
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7th Educational Activity	
Title of EA	Cluster Analysis (application)
Description	<i>Apply Cluster Analysis to group data points based on similarities and interpret the cluster solutions.</i>
Estimated Study Time	1 hour
Description of the 7 th Learning Object	
Title of LO	Cluster Analysis
Learning Outcomes	LO1-LO6
Language	English
Type	Theory application
Supporting Resources (Bibliography/ Webography)	--
Content of Learning Object	
<p><i>Instructions:</i></p> <ul style="list-style-type: none"> • <i>Go to JAPS Data Library → Machine Learning and open the dataset.</i> • <i>Perform cluster analyses to identify natural groupings (clusters) within the data.</i> • <i>Describe the characteristics of each cluster and interpret the practical implications of these groupings.</i> 	

8th Educational Activity
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Title of EA	Multivariate Regression and SEM Interpretation (application)
Description	<i>Interpret the results of Multivariate Regression and Structural Equation Models (SEM) in a research context..</i>
Estimated Study Time	1 hour
Description of the 8th Learning Object	
Title of LO	Multivariate Regression and SEM Interpretation
Learning Outcomes	LO1-LO3
Language	English
Type	Theory application
Supporting Resources (Bibliography/ Webography)	--
Content of Learning Object	
<p><i>Instructions:</i></p> <ul style="list-style-type: none"> • <i>Open Activity 1. Multivariate Regression and SEM.docx file which contains the results from a multivariate regression analysis and SEM analysis performed in spss and spss amos.</i> • <i>Interpret the coefficients, standard errors, significance levels, and R-squared values in the multivariate regression.</i> • <i>Interpret the path coefficients, model fit indices, and significance tests in the SEM output.</i> 	

12th LEARNING UNIT OUTLINE

Overview of the Learning Unit

Study Week	<i>12th and 13th Week</i>
Title	Searching and Reviewing Relevant Literature Writing and Communicating Research Findings





LU Description	This lesson provides an in-depth understanding of the research process in psychology, covering the critical steps from literature review to effective communication of research findings. Students will learn how to search for and critically review relevant literature, as well as how to write and present their research clearly and ethically.
Concepts – Keywords	Literature Review, Databases (e.g., PubMed, PsycINFO), Boolean Operators, Search Strategies, Peer-Reviewed Journals, Critical Appraisal, Synthesis of Findings, Scholarly Writing, APA Style, Citations and References, Ethical Reporting, Research Reports, Oral Presentations, Visual Aids, Peer Review.
Learning Outcomes	<ol style="list-style-type: none"> 1. Understand the significance of a literature review in the research process, 2. Explain the use of Boolean operators and search strategies in database searches, 3. Create a research report following APA guidelines, 4. Critically evaluate research articles for their quality and relevance, 5. Synthesize and organize findings from the reviewed literature, 6. Develop a well-structured literature review section for a research paper.
Evaluation of LO	<i>LOs not directly assessed</i>
Strategies/ Teaching Techniques	<i>Presentation (theory), activities, case studies, self-assessment, video, group discussion</i>
Estimated Study Time	<i>60 hours</i>

Detailed Description of Educational Activities and Learning Objects

1 st Educational Activity	
Title of EA	Study Material (core bibliography)
Description	<p><i>Study the presentation file titled “Searching and Reviewing Relevant Literature Writing and Communicating Research Findings” which briefly presents how to search for and critically review relevant literature, as well as how to write and present their research clearly and ethically.</i></p>





Estimated Study Time	5hours
Description of the 1st Learning Object	
Title of LO	<i>Study Material</i>
Learning Outcomes	<i>L.O. 1-5</i>
Language	English
Type	Theory, Presentation of theory
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
Introduction to Advanced Research Methods.pptx	

2nd Educational Activity	
Title of EA	Literature Search (application)
Description	<i>This activity is designed to help students develop skills in conducting a literature search.</i>
Estimated Study Time	1 hour
Description of the 2nd Learning Object	
Title of LO	Literature Search
Learning Outcomes	LO1- LO2
Language	English
Type	Theory Application
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	





Instructions:

- You are conducting a literature review about the Impact of Social Media on mental health.
- Decide the keywords that you are going to use as well as the Boolean operators
- Decide the databases that you are going to search for relevant scientific articles
- Conduct a literature search
- Use Rayyan (<https://rayyan.ai/>) to organize and manage your results
- Present the initial report after the deletion of duplicates

3rd Educational Activity	
Title of EA	APA Guidelines for in-text citations and references (application)
Description	<i>Identify which statements require citations according to APA guidelines and provide the correct in-text citations and references for the statements that need them.</i>
Estimated Study Time	1 hours
Description of the 3rd Learning Object	
Title of LO	APA Citation Scavenger Hunt
Learning Outcomes	LO1 – LO3
Language	English
Type	Theory Application
Supporting Resources (Bibliography/ Webography)	Doctoral Study Program Textbook Presentation
Content of Learning Object	
Instructions:	
<ul style="list-style-type: none"> • <i>Identify which statements require citations according to APA guidelines and provide the correct in-text citations and references for the statements that need them.</i> <ol style="list-style-type: none"> 1. <i>"The capital of France is Paris."</i> 2. <i>"The theory of relativity was proposed by Albert Einstein."</i> 3. <i>"According to a recent study by Smith et al. (2020), climate change is a pressing global issue."</i> 	





4. "Water boils at 100 degrees Celsius at sea level."
5. "The United Nations was founded in 1945."
6. "The Mona Lisa is a famous painting by Leonardo da Vinci."
7. "In his book 'To Kill a Mockingbird,' Harper Lee addresses themes of racial injustice."
8. "The first computer, the ENIAC, was developed in the 1940s."
9. "The iPhone was released by Apple Inc. in 2007."
10. "The Declaration of Independence was adopted on July 4, 1776."
11. "According to a personal communication with John Smith, he stated that the company's profits are on the rise."
12. "The quadratic formula is used to solve quadratic equations."
13. "The APA Publication Manual (7th edition) provides guidelines for academic writing."
14. "Shakespeare's play 'Hamlet' explores themes of revenge and madness."
15. "The Eiffel Tower is a famous landmark in Paris."

4 th Educational Activity	
Title of EA	Self-assessment (multiple choice questions, true-false statement, short answer questions)
Description	
Estimated Study Time	1 hour
Description of the 4 th Learning Object	
Title of LO	Statistical Analysis Techniques, Interpretation of Results II
Learning Outcomes	
Language	English
Type	Self-assessment
Supporting Resources (Bibliography/ Webography)	Presentation Doctoral Study Program Textbook
Content of Learning Object	

5 th Educational Activity





Title of EA	Additional readings (optional)
Description	<p>Additional reading covering the theory discussed:</p> <p>APA Style Handouts and Guides: https://apastyle.apa.org/instructional-aids/handouts-guides</p> <p>OER: Jhangiani, R. S., Chiang, I. C. A., Cuttler, C., & Leighton, D. C. (2019). Research methods in psychology. Kwantlen Polytechnic University.</p> <p>Chapter XI: Presenting Your Research https://kpu.pressbooks.pub/psychmethods4e/part/presenting-your-research/</p> <p><i>Pautasso, M. (2013). Ten simple rules for writing a literature review. PLoS computational biology, 9(7), e1003149.</i></p> <p><i>Bem, D. J. (2021). Writing the empirical journal article. In The complete academic (pp. 171-201). Psychology Press.</i></p> <p><i>Paul, J., & Criado, A. R. (2020). The art of writing literature review: What do we know and what do we need to know?. International business review, 29(4), 101717.</i></p> <p><i>Cronin, M. A., & George, E. (2023). The why and how of the integrative review. Organizational Research Methods, 26(1), 168-192.</i></p>
Estimated Study Time	17hours
Description of the 5 th Learning Object	
Title of LO	Additional readings (indicative)
Learning Outcomes	LO1-LO6
Language	English
Type	Theory
Supporting Resources (Bibliography/ Webography)	AI powered tool for systematic reviews https://www.rayyan.ai/





	<p>How to Give a Killer Presentation: https://hbr.org/2013/06/how-to-give-a-killer-presentation</p> <p>The Literature Review: A Few Tips On Conducting It: https://advice.writing.utoronto.ca/types-of-writing/literature-review/</p>
Content of Learning Object	
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6th Educational Activity	
Title of EA	Suggested videos
Description	<p><i>You can visit the links below for watching videos related with this unit:</i></p> <p><i>APA Style Tutorials and Webinars:</i> https://apastyle.apa.org/instructional-aids/tutorials-webinars</p> <p><i>Psychological Science and Public Communications: Debates and Next Steps:</i> https://www.youtube.com/watch?v=MG2Ej1kSQY4&list=PLxf85IzktYWIZu-8SHsmDCfJ7Rznn4jOf&index=47&ab_channel=AmericanPsychologicalAssociation</p> <p><i>Why storytelling matters:</i> https://www.youtube.com/watch?v=YbV3b-l1sZs&ab_channel=TEDxTalks</p> <p><i>How to avoid death By PowerPoint:</i> https://www.youtube.com/watch?v=lwpi1Lm6dFo&ab_channel=TEDxTalks</p>
Estimated Study Time	9 hours
Description of the 6th Learning Object	
Title of LO	Suggested videos





Learning Outcomes	LO1-LO6
Language	English
Type	Theory
Supporting Resources (Bibliography/ Webography)	--
Content of Learning Object	
--	

7th Educational Activity	
Title of EA	Research Presentation (application)
Description	<i>Prepare your research presentation for the Final Project!</i>
Estimated Study Time	1 hour
Description of the 7 th Learning Object	
Title of LO	Cluster Analysis
Learning Outcomes	LO1-LO6
Language	English
Type	Theory application
Supporting Resources (Bibliography/ Webography)	https://www.canva.com/
Content of Learning Object	
<p><i>Instructions:</i></p> <ul style="list-style-type: none"> • <i>Create a 10-minute research presentation using visual aids (e.g., PowerPoint slides).</i> • <i>Remember to be clear and try to engage the audience!</i> 	





Notes:

Educational Activities: An explanation of the various activities, exercises, assignments, or tasks that students will engage in as part of the learning process. This could encompass lectures, discussions, group projects, laboratory work, assessments, and more.

Learning Objects: A description of the learning materials, resources, or content that will be used to convey information and facilitate learning. This may include textbooks, articles, multimedia presentations, software, simulations, and other educational materials.

Learning Outcomes: Clear statements of what students are expected to achieve or learn as a result of participating in the educational activities and interacting with the learning objects.

Assessment Methods: An outline of how students' progress and understanding will be assessed or evaluated, including details about assignments, quizzes, exams, etc.

Supporting Resources: Information about any additional resources or support services available to students to aid in their learning process.

