

WRITTEN EXAMINATION

Course: **Research Methodology and Communication**

Course code: **VP761**

Credits for written examination: **4 credits**

Date: 2026-08-18 at 8:15 - 12:30

Examination responsible: Sunith Bandaru

Teachers concerned: Jörgen Hansson

Aid at the exam/appendices: No aids, tools, or electronic devices are allowed

Other: Choose and answer at most(!) four out of the five essay questions.
If you are answering more, the last question overflowing the limit will not be graded. Questions are equally weighted (10 points/question). Answer each question as a short text essay composed of one or more paragraphs, supplementing your answer with diagrams if desired. Points are awarded for each reasoning/argument/part of the answer that is distinct (not a repetition of a previous part), relevant to the question and justifiable from an informed reading of the course text. Answer in Swedish or English. Write legibly!

- Instructions
- ☐ Take a new sheet of paper for each teacher.
 - ☒ Take a new sheet of paper when starting a new question.
 - ☒ Write only on one side of the paper.
 - ☒ Write your name and personal ID No. on all pages you hand in.
 - ☒ Use page numbering. **Order your answers in sequential/linear order of the questions!**
 - ☒ Don't use a red pen.
 - ☒ Mark answered questions with a cross on the cover sheet.

Failure to follow the above instructions will result in point reductions!

Grade points: 40

ECTS grading:	A: 36-40	B: 32-35	C: 28-31
	D: 24-27	E: 20-23	F: 0-19

Examination results should be made public within 18 working days.

Good luck!

ESSAY QUESTIONS (Choose 4 of 5)

(10 points per question)

Question 1: Contrasting Case Study Strategies

Case studies can be exploratory, descriptive, or explanatory, and can use single-case or multiple-case designs.

- (a) Compare the strengths and weaknesses of single-case versus multiple-case approaches in explanatory research.
- (b) Provide an example of when a single-case design would be methodologically stronger than a multiple-case design, and justify your choice.

Explain how case selection strategy impacts validity of the case study

Question 2: Research Ethics and Methodological Dilemmas

As a researcher, you are bound by ethical guidelines and legal frameworks such as the GDPR, which dictate how you collect, store, and process personal data. Imagine you are planning an observational study to investigate how effectively a development team collaborates during stressful sprint deliveries.

- (a) Discuss the ethical implications of conducting covert (hidden) participant observation in this setting. Is it ever justifiable to carry out research where the subjects cannot give informed consent? Reason about the balance between the validity of the research (avoiding the observer effect) and the potential harm or rights violations of the participants.
 - (b) If you instead decide to use surveys and interviews to collect data on the team's stress levels and collaboration, explain the potential risks regarding data protection, anonymity, and how you would legally and ethically manage the collected data.
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Question 3: Design Science Research

In Design Science Research (DSR), the primary goal is to generate utility by building an artifact to solve a practical problem.

- (a) Name and provide real-world examples from the computer science or engineering domain of the four canonical types of artifacts produced in DSR (Constructs, Models, Methods, and Instantiations).
 - (b) Discuss the notions of epistemology, ontology, and research paradigms and their relationship to DSR. To phrase it slightly differently, what are the epistemological and ontological stances of DSR, and what is the research paradigm of DSR?
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Question 4: Research paradigms and bias

Scientific research is often reviewed and discussed through the lenses of **objectivity and subjectivity**, and **prone to bias**. Discuss how these concepts apply to different research paradigms (e.g., **positivism, interpretivism, and critical research**). Provide examples of potential sources of bias in qualitative and quantitative research and discuss strategies researchers can use to mitigate these biases while maintaining the integrity of their findings.

Question 5: Research Strategy Under Constraints

A large retail bank is developing a new **AI-powered customer service chatbot** intended to handle 60–70% of common customer queries without human intervention. The chatbot will integrate with existing customer databases, handle both text and voice queries, and is expected to be deployed across multiple branches and the bank's website.

Their research aim is as follows. The company wants to evaluate the chatbot's usability, accuracy in providing correct answers, and potential impact on customer satisfaction before live deployment. They are particularly concerned with: (i) how easily customers can interact with the system, (ii) whether the chatbot provides accurate and relevant responses, and (iii) how the chatbot might influence perceptions of trust and brand quality

However, due to legal and reputational concerns, no experiments or testing involving actual customers may be conducted before deployment. This means that while direct user studies with live customers are not allowed, evaluation can/may still proceed using internal staff (as proxies), simulated customer interactions, or historical data.

Constraints:

- All research must be completed within six months, including design, data collection, and analysis.
- Available resources:
 - Internal staff who can act as simulated customers/proxies
 - Historical customer service chat logs and call transcripts
 - System usage metrics from existing non-AI chat systems
 - Limited budget for external usability experts or focus groups

You are asked to do the following:

- (a) Design a research strategy that still produces credible findings under these constraints.
 - (b) Discuss trade-offs in validity and reliability given your design choices.
 - (c) Justify your selection of data collection and analysis methods given the restrictions.
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