Example of an analysis:
Phenomenography: A way to study learning from the students' perspective

Purpose of session
Phenomenography: A way to study learning from the students' perspective

- Get a feel for
  - how the analysis stage in a qualitative research project can be performed.
  - the nature of the results that can be offered.
- Get a new perspective on "object" and "class"

Content of session
Phenomenography: A way to study learning from the students' perspective

- Learn phenomenography
- Analyse how students understand the concepts of "object" and "class" through a phenomenographic analysis of excerpts from interviews.

Detailed content of session
Phenomenography: A way to study learning from the students' perspective

1. What is phenomenography?
2. How do we do phenomenography?
3. What is a "phenomenographic outcome space"?
4. A lab (which will lead to homework)
5. Discussion: What do the results tell us?

Phenomenography
It is a research approach, that reveals the learners' perspective
- It is empirical and qualitative. Key reference: Marton & Booth, 1997
- Aim: Analysing and describing the variation in students' experience (understanding, learning) of something (a phenomenon).
- Outcome: A few qualitatively different ways, in which something is understood within a student cohort.
- It is non-positivistic, non-dualistic approach, that takes a second-order perspective.
- Does not prescribe certain things to do => Not a method.

Examples of phenomenographic results
- A dichotomy surface vs. deep learning
- How do students go about programming? (Booth, 1992)
  - Expedient.
  - Constructional.
  - Operational.
  - Structural.
- What is a computer network protocol? (Berglund, 2002)
  - A way to communicate between two computers.
  - A method for communicating on an internet.
  - A set of rules.
  - A standard.
Phenomenography

The students study TCP

TCP

The researcher studies the different ways in which the students understand TCP

Students taking a course

Researcher

The researcher is a learner in relation to his study object

How do we do phenomenography?

1. Specification of the research question
2. Data Collection
3. Analyses
4. Deploying the results

Focus during this session

2. Data Collection

- Normally through interviews that are transcribed.

“Go fishing”

- Aim of the interviews:
  - The interviewee should talk

- Means:
  - Questions, follow-up questions, summaries, keeping quiet, shifting contexts, creating a “good” atmosphere

3. Analysis, how to (1)

- Iterative process
- Read transcripts
  - Go into them. “Live the interviewee”.
  - Keep your analytic distance
- Cut out relevant parts
- Sort in piles
  - What does a pile tell me?
  - Does this fit with the whole?
  - Is there a structure between the piles?

3. Analysis, how to (2)

- Consider
  - The categories do not describe individuals. That is, one individual can “appear” in many categories.
  - See the individual against the many
  - Go in a dialogue with data

- Hints
  - Aim for 2-5 categories
  - Make sure you can verbalise the research question as well as the categories

3. Analysis, your role

- No “magic”, but hard work.
- No “right answer”, but different interpretations (which should, however, be well-grounded in data and theory)
- You are a part of the results.
- You are your best “tool”
What is a “phenomenographic outcome space”?
- It describes the different ways, in which a phenomenon is experienced in a cohort.
- It describes the different ways, in which a researcher has interpreted how a phenomenon is experienced in a cohort.

Characteristics of a phenomenographic outcome space
- The categories are valid for a collective.
- The results are partial.
- Meanings vary in and between individuals.
- A category (normally) corresponds badly to any one individual.

Summary
- What is a research approach/framework/methodology?
  - A lense, a way to relate to a research problem.
- What is phenomenography?
  - A research approach. Takes the learners’ perspective.
  - How do we do phenomenography?
    - Interview, transcribe, sort in piles, resort, think. Don’t assume a right answer.
  - What is a “phenomenographic outcome space”?
    - A set of categories. Each category describes a certain way in which a phenomenon is understood in a certain cohort. Structure and meaning. Logical structure.

Lab/homework, what to do
- You have 31 interview excerpts, from interviews with engineering students, taking their first programming course in Uppsala.
- Make one or many phenomenographic analyses on question(s) (phenomena) that are researchable with the data, for example “How do students understand ‘class?’”, “How do students understand programming?”, “How do students learn OOP?”.
- You will not use all quotes; some quotes will fit in several sets of categories.

Lab/homework, what to think about
- Please, present
  - the categories you have identified
  - in what way are they related
  - what these categories tell you
- Also discuss topics such as
  - What kind of research questions phenomenography can be used for
  - What kind of research questions that phenomenography is not good for
  - Arguments for and against trusting phenomenographic results
  - What is evidence?
  - What is the role of the researcher?
  - To what extent is the researcher present in the results?
  - Arguments for and against that the results of a lab of this kind has a value?
  - What you have learned from the lab?

Lab/homework, how to
- Self-selected teams of 3 or 4.
- Do not do the work in old “homework teams”
- At least two universities should be represented in each team
- A report on 3 – 4 pages normal (non-ACM) style is good