Qualitative methods in research

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Today
- Qualitative methods in research?
- Course content, an overview
- Course formalities
- What do you expect from the course?

Qualitative methods in research, why?
- Qualitative research methods open research question that are not accessible within the "normal" scientific method.
- Qualitative research methods offer a rich repertoire of tools.
- Applications in fields that are related to how humans interact with science and technology, for example
  - Human Computer Interaction
  - Computing Education Research

Quantitative/Qualitative research
(methodological distinction)
- Quantitative research is grounded on
  - "... the assumption that features of the [...] environment constitute an objective reality ... collecting numerical data on observable variables"
- Qualitative research is grounded on
  - "... the assumption that individuals construct a social reality in the form of meanings and interpretations. ... studying ... intensively in natural settings"

Implications for the role of the researcher, the concept of evidence, interpretation etc.

(Gall, Borg & Gall, 1996)

Qualitative research (epistemological perspective)
- Much qualitative research interpretative (or non-positivist)
  - as opposed to positivist or critical
- Results are interpretations –
  - knowledge is gained through social constructs
  - not predefined independent and dependent variables, but a focus on complexity
  - understand phenomena through the meaning that people assign to them
- Note: some qualitative research is not interpretative

A family tree of ways to perform research

Ontological level (existence)
Epistemological level (knowledge)
Type of research question
Research approach
Data collection and analysis methods
CS Education is about research methodology. It offers new perspectives on CS

A researcher in CS studies computing
A researcher in CS Education study how students understand computing

Why this course?

- Gain confidence in the applicability and relevance of non-quantitative methods in our research environment.
- Some research questions are better addressed by qualitative methods. These methods have to be theoretically well-founded and rooted in established research tradition.
- The course questions what research is, and how it "ought to" be performed.
- Discusses the relationship between the result and the research methodology as well as the role of the researcher.
- New ideas.

Formal issues

- **Credits:** 5p (7,5 ECTS)
- **Aim:** After taking the course, a participant should
- **Content:** The basics of qualitative research methods and research approaches. Some qualitative research approaches, such as phenomenography, activity theory and ethnography. Data collection methods such as interviews, field studies and observations. Evaluating the collected data. Performing a study.
- **Intended participants:** PhD students in the faculty of science and engineering.
- **Time plan:** The course starts on Oct 5, with the first lecture 10.15 – 12.00. The course ends in late February or early March.
- **Organisers:** The course is collaboratively offered by the Human-Computer Interaction (HCI) group and the Uppsala Computing Education Research Group (UpCERG) at the Department of Information Technology.

Content, tentative

1. **Novice Students’ Learning of Object-Oriented Programming, Licentiate seminar for Anna Eckerdal. (tomorrow)**
2. Non-positivistic research approaches (prel. title), Sharon Rider
3. Researching students’ learning of computer science (to discuss the relationship between how research is performed, and the nature of the results), Anders Berglund
4. Phenomenography, lab, Anders Berglund
5. Knowledge production by means of qualitative methods, Gunilla Castersen,
6. Seminar, Discussion
7. Teams of computer science students - on gender, collaboration and power, Licia Barker, Mattias Wiggberg, Anders Berglund
8. A critical perspective in research (prel. title), Tony Clear
9. Field studies in Human-Computer Interaction, case study (prel. title), Anders Jansson
10. Activity theory and qualitative methods, Henrik Artman
11. Ethnology and Human-Computer Interaction, Minna Räsänen
13. Seminars on final projects

Assessment, tentative

- Large project
- Active participation in seminars
- Reflections
- ?

What are your expectations?