Welcome!

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What is my problem?

How to analyse the collected data?

Abstract question:
How do I combine theories from different traditions in one study?

natural science
sociology
educational sciences

Focus on the analysis!
"Instead of equipping students to participate thoughtfully with fellow citizens building a democratic, open and just society, school science will be a key factor in the reproduction of an unequal and unjust society" (Linder et al, 2007, p.8)

“there is a risk that school science simply maintains the status quo and pushes minorities even further toward the margins” (Tobin et al, 1999, p. 172).
Assumptions

Assumptions concerning reproduction at school in general, and in school science in particular:

• Success in school Science (Physics, Chemistry and Biology) has been shown to act as a gatekeeper to higher education and broadening life chances (Broady & Börjesson, 2008; Harker, 1990; Linder et al., 2007).

• Failure in mastering Science at school is correlated to low social class. Foreign background correlates both to school failure and to social class, which makes the situation particularly complex (The Swedish National Agency for Education, 2009a, 2009b; Egelund & Eidesgaard, 2009; Gonzales et al., 2008; Gorard & See, 2009; Goyette & Mullen, 2006; OECD, 2007; Turmo, 2004).

• Both success and failure at school play an important part in reproducing social and economic structures (Bourdieu & Passeron, 1977).
Research questions

1. How is the reproduction of inequalities shaped in the science classroom, regarding aims and purposes, goals, content, and assessment practices and criteria?

2. How is the reproduction of inequalities shaped in the science classroom, regarding classroom interactions and relations?

3. How do students’ positions regarding gender, ethnicity and socioeconomic background correlate and interact?
Collected data

Data from two classes from two different Swedish compulsory schools: a) middle class area in a small town, students with foremost Swedish background, year 8 (aged 14 and 15), students are followed during a 5 week unit on Physics. b) multi-ethnic urban area, students from different backgrounds, year 7 (aged 13 and 14), students were followed during 2 ½ months including units of Biology and Chemistry.

Ethnographic research design, observations, interviews, recordings, field notes, student work, student questionnaires similar to the PISA 2003 Student questionnaire
Some thoughts about the analysis

The analysis will make use of concepts derived from two different research areas:


- Research on science education, concerned with the issues of gender, ethnicity and/or socioeconomic background (Aikenhead, 1996; Carter, 2004; Cobern & Aikenhead, 1998; Costa, 1995; Kelly, 2007; Lee, 2003; Lee & Fradd, 1996; Mortimer & Scott, 2003; Roth & Tobin, 2000; Tobin et al., 1999; Wickman, 2005).
What is my problem?

Ethnographic process - the analysis is not a distinct stage of the research process, an ongoing process, reflexivity

How to analyse collected data?

How do I combine theories from different traditions in one study?

Unit of analysis?

Text analysis, thick descriptions, and/or categorisations?

TANGIBLE PROPOSALS!
Thank you!
谢谢你！
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Other questions and issues

1. What kind of problems and concerns do I have to deal with in the cross-section between natural science, education and sociology?
2. How to run methods inspired by ethnography in a critical perspective?
3. What is my unit of analysis in this point of intersection?
4. How do I combine theories from different traditions in one study?
5. What issues and problems could be raised regarding how to use macro perspective in a classroom setting?

6. In what way can the concept ‘habitus’ contribute to the understanding of reproduction in school science subjects? (See for example (Reay, 1995, 2004; Roth & Tobin, 2000; Zevenbergen, 2005).

7. How can research in between sociology of education and science education be carried out? What are the methodological and theoretical challenges in working between these areas?

8. What implications might the results of the study have for science education? How can this research contribute to the discussion and shaping of policy in science education?

9. In what way may science education serve as a key factor in reproducing unequal economic and social structure?
10. How can science education contribute to the ongoing discussion about citizenship in education?
Abstract

How to combine theories from different traditions in one study

To be positioned in the cross-section between natural science, education and sociology traditions, what does it mean? What does it imply to have a critical perspective on science education?

It is a well known fact that many students fail in the school science subjects (OECD, 2007; Skolverket, 2005). Studies show that students form disadvantaged home and/or foreign backgrounds are failing to a greater extent and there is a considerable risk that they are excluded from school science. Instead of equipping students to take responsible and thoughtful decisions that build a democratic society, school science might contribute to reproduce an unequal society (Banks, 2008; Linder, Ostman, & Wickman, 2007). The aim of my thesis is to contribute to the understanding why so many students from home with low socioeconomic standard and/or with foreign background fails in physics, chemistry and biology and what consequences this might have.

The study has progressed towards a critical perspective dealing with questions such as: What is a failure? Who and what determines what constitutes a failure? Who decides what kind of knowledge to be included in the scientific knowledge?

The overall aim is to study how relations of power and structures are reproduced in school and particular in school science (Bourdieu & Passeron, 1977; Broady & Börjesson, 2008).

Spring 2010 data will be gathered by using methods from the fields of ethnographic studies. The data will be analysed from a sociological perspective by applying notions from Pierre Bourdieu (Bourdieu & Passeron, 1977; Broady, 1985).

At the NFPF/NERA conference I would like to discuss following questions: What kind of problems and concerns do I have to deal with in the cross-section between natural science, education and sociology? How to run methods inspired by ethnography in a critical perspective? What is my unit of analysis in this point of intersection? How do I combine theories from different traditions in one study?