Qualitative Methods
(Day 4)

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Goals for today

Look at the process for analyzing qualitative data

What types of research questions does qualitative analysis answer?
What were the data sources?
How did they analyze it?
How did they set up the study to collect appropriate data?
Papers read

Students’ understandings of objects and classes
https://dl.acm.org/doi/10.1145/1067445.1067473

Affordances of Scratch GUI
https://dl.acm.org/doi/10.1145/2787622.2787729

Quantum reversibility and young learners
https://dl.acm.org/doi/10.1145/3372782.3406255
Objects & Classes

Data used: semi-structured interview / think-aloud problem-solving session transcripts

Analysis methods: open coding

Study design: “The interviewer had prepared a small number of questions, intended to approach the phenomena of object and class in different ways, to give the opportunity for the students to express as much of their understanding as possible” - was it only questions and not problems? Not sure. Give them some problems to work on so that they had something to talk about, and then ask them questions about how they did it, etc.
Scratch GUI

Data used: Interview / focus group, screen & video recordings

Analysis methods:

1. What do students make predictions about?
2. What students used to make predictions about
3. Categorize by affordance type

Study design:

Given starter program and asked to predict aspects about it, then modify the code based on their assumptions.
Quantum Reversibility

Data used: Student written work, observation field notes

Analysis methods: Open coding

Study design:

Three activities - hands-off in terms of instruction, exploratory in nature to get them to express understandings of reversibility

Facilitators helped get the ball rolling in discussions

Activity 1: Groups so they had to discuss and come to agreement on their opinions

Activity 2: Take a stand and justify it (in writing) so we could see their reasoning

Activity 3: Simple, written one to round out the results on an individual level
What are useful data sources for qualitative data?

- Interviews
- Focus groups
- Worksheets - open-ended questions
- Recordings / videos
- Surveys
- Field notes
- Collaborative group work (to get them to talk)
What is important about study design?
Which RQ’s fit qualitative analysis?

Which group understands X better?
How do learners conceptualize X?
What kinds of understandings do students have that interfere with learning X?
How often do students exhibit behavior X?
Let’s try it

Partner with someone and focus on one of your topics

Develop 2-3 qualitative research questions around that topic (you’ll probably need to get pretty specific)
Let’s try it

Choose a data collection source and design an activity to collect data on one qualitative RQ.