# **Assignment | Project 5: Qualitative Coding**

**1. (Team portion)** Provide the items below, and explain:

| *1. Research questions and Propositions* | RQ: What kind of challenges are CS students facing while collaborating remotely on research work during COVID?  1) What are the various channels and tools via which CS students facilitate remote collaborative research?  2) How has remote work been affected by remote collaborative meetings? |
| --- | --- |
| *2. Units of analysis* | The meetings itself, The encountered problems, Tools themselves, CS students |
| *3. Data* | 1) Observations during meetings regarding what tools these CS students use and what challenges they face.  -a) What new tools are being used for remote collaboration and how are they affecting research work?  -b) Misunderstandings / Repetition of explanation  -c) Body language if cameras are on  -d) Intonation  -e) Features of tools being used (e.g., Zoom share screen.)  2) Semi-structured Interview regarding meetings |
| *4. Segmentation* | For observations, we segment sentences.  For interviews, each Conversation turn is a segment. |
| *5. Code Set Origins and Rationale* | * **W**here our code set came from:   We are following a top-down approach from a published theory, the theory of remote scientific collaboration (TORSC) [1]. Olson et. al developed TORSC based on previous research on collaboratories. TORSC states five categories of factors pertaining to the team, and their task management, which play a role in successful distance collaboration, such as (1) the nature of the work, (2) management, planning and decision-making, (3) common ground, (4) collaboration readiness and (5) technology readiness.   * **Why** did we choose this code set?   We chose this theory over others (such as Cognitivism, Collaboration theory) because the basis of this theory entirely coincides with our case. Olson’s work specifically investigated scientists who are often remotely located and the complexity of their work, as well as skills and equipment they used to perform their research. In our project, we are also investigating how people (our population: Student researchers) are doing collaborative work and specifically want to look at how they are using specific tools and why. |
| *6. Code Set and definitions/examples/rules* | * **Code1:** Nature of the work - this code defines how members in a collaborative environment are actually able to collaborate effectively. Answers RQ-3.   + **Corresponding rule:** Whenever sentences mention about working chemistry and how team members prefer to work or make the work clear and unambiguous.   + **Example:** This extract from our data “*Let's say if I am in an in-person room and you're all my team members, and I just like, I'm ready to do this. Uh, Um, they, I do this, uh, sweet. I do this and I forget about the fourth member. And I just keep talking to you three people. Then the fourth person would feel dejected. I will probably not contribute as much as if it's the same with online too.*” * **Code2:** Common Grounds - this code defines how members in a collaborative environment come to a consensus with one another. Answers RQ-2.   + **Corresponding rule:** Whenever segments talk about collective progress, mutual knowledge, beliefs, and/or assumptions and team members sharing a common management or working style   + **Example:** *“I would say online people who contribute more rather than doing offline. This is just based on what I've seen so far or based on my previous experience. And it's. Um, so here's the thing, right? It all depends boils down to work kind of team member. They are who's a leader or who is trying to guide the conversation on discussions and stuff like that.”* * **Code3:** Collaborative Readiness - this code defines how prepared members are to collaborate in a remote setting. Answers RQ-3.   + **Corresponding rule:** Whenever sentences mention about the data sharing methods - How do they share the documents ? Come up with a meeting time?   + **Example***: “You have to see which cause it is on which page is just, they didn't. Then when you're working on the same thing, you rather stream or share your screen and everyone works on the same thing. So most of the time I do the writing work and everyone is pitching their ideas. Um, and I keep making the changes in it.”* * **Code4:** Management, planning, and decision making - this code defines how time is managed, work is planned and decisions are made in a collaborative research setting. Answers RQ-3.   + **Corresponding rule:** Whenever team members are talking about effectiveness, roles, responsibilities, timelines. Any member exhibiting strong leadership qualities, Whenever a communication plan is in place.   + **Example***: “It's that no one has different tools compared to the other person. And if that is not the best environment for collaboration, I don't know what else is. Okay. So for an in-person meeting, what.”* * **Code5:** Technology readiness - this code defines how prepared the members in a collaborative setting are, to use different online collaborative mechanisms to communicate. Answers RQ-2.   + **Corresponding rule:** Whenever participants mention the preference of a technology, Collaboration technologies provide the right functionality and are easy to use, Technology readiness also involves reliability. If the technology is unstable (as some research proof-of-concept prototypes can be), people will be unlikely to use it   + **Example***: “And you have easy access to materials. You had the same Google doc that you're working on. It's not. And then people, so one person has a board that it wasn't this not habit. It's not like that everyone has equal resources. It's, it's kind of inclusive. You know, you, you can all pitch in and do the same thing.”* * **Code6:** Tool use - Looks at the reasoning behind why and how a particular remote collaborator uses a particular tool. Answers RQ-2.   + **Corresponding rule:** Whenever participants mention the usage of a tool and/or why they use it.   + **Example***: “So, so as, uh, as you know, like, uh, I think I've mentioned this before, but anytime there is a group project, the first thing I do is start a Google drive”* |
| *7. Logic (Rationale, Part 2)* | The codes corresponding to the nature of the work, management, planning and decision-making, common ground and collaboration readiness answers our research questions on how research students are currently managing to collaborate remotely, and whether they are able to do so effectively.  On the other hand, technology readiness and tool use point towards the usage of technological challenges faced while collaborating remotely.  Our codes aim to capture the essence of what our RQ’s are trying to figure out. |
| *8. Your coding so far* | * Link to the coding spreadsheet:   <https://docs.google.com/spreadsheets/d/18MBAoL6gFah9goq60M7SFPCy0Wftt3zNJXj8joLen3Y/edit#gid=107825516>  So far, two team members (Satyajit & Amreeta) discussed the codes on a TINY dataset (1%) and after gaining a fair understanding, they have so far independently coded randomly sampled 10% of the data. The IRR (Jaccard index) is 85%. |



[1] Olson, J. S., Hofer, E. C., Bos, N., Zimmerman, A., Olson, G. M., Cooney, D., & Faniel, I. (2008). A theory of remote scientific collaboration. *Scientific collaboration on the internet*, 73-97.