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Putting the E in QE: How Quantitative Ethnography can Enrich Qualitative Analyses

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Abstract

In this session, we will take a deep look at a case study where Epistemic Network Analysis (ENA) was employed after the completion of a qualitative analysis that showed the emotional development of a classroom learning community, ultimately leading to new findings and insights. Based on this example, our session will explore how ENA can be used to both confirm the results of qualitative investigations, as well as to extend on their findings by suggesting new ways to qualitatively explore data. As an additional feature of this presentation, the exploration of this case study will highlight ways in which ENA can be used to examine complex socioemotional phenomena.

Brendan Eagan 00:03
All right. Welcome, everyone to this month's installment of the quantitative ethnography webinar series. It's my pleasure to introduce our presenter today, Dr. Tom hoed, who is an assistant professor at the University of Haifa. In the Faculty of Education, he's also the head of educational, the educational technologies graduate program, and the director of the Lynx future learning spaces and also was a Mary Curie fellow, which is a David was at one point, and we also have Sylvia as a Mary Curie fellow. So that's another nice feather in the cap of this community, which is pretty cool. So, yeah, without further ado, I'll turn things over to Hendrick who will be, you know, facilitating the webinar today. But it's with great pleasure that I'm introducing yo Tom today. He's a great guy, and very fun to work with. And I think he has a very interesting topic for us to discuss today. Thanks, Hendrick. I'll kick it over to you and to Tom.

Hendrik Drachsler 01:01
Perfect. I mean, I don't have to add too much. I mean, the webinar today you saw it. It's about putting the view back to Q and A's. So it's about a doctor trophy, and how this q&a tools can add more qualitative insights into qualitative data, so to say, and I'm also super interesting to see what your turn brought us and to learn about it. So you're done. It's your place. And I try to keep any any questions. In the meantime, put it in the chat, I will try to make notes and moderate the session after the presentation. Thank you so much.

Yotam Hod 01:37
Okay, so I'll share my slides. But first, let me just say that this is a really wonderful community. It's awesome to be here. I'm so happy you guys put this together. And, yeah, well, let's let's let's get started. So the topic As you already know, putting in QE, how quantitative ethnography can enrich qualitative analysis. And, and basically, I want to first describe how this came together, give a little background, and then, and then move from there. So first of all, I'm one of my students. She's currently a PhD student, but at the time was a master's student, she was really interested in socio emotional and socio cognitive dynamics and learning. And she took one of my courses, and, you know, she expressed this interest, and we talked a little bit about this topic, and, you know, just started with her doing her master's thesis for me. Um, at the same time, I was teaching a course. And this is actually one of the courses that the course that she took was on learning communities. In particular, I've an interest in what I call humanistic knowledge building communities. I'll explain more about it later. It's important for the context in the setting here. But uh, but in any case, we're dealing here with a lot of both the emotional sides and the cognitive sides learning, and really blending them together. And so it was a very good context for her to study these questions that she was asking. And she ended up writing her thesis on in this context, and we actually published a paper on it. And that's very important to what I'm talking about here. And so this is the paper got published in beechjet. About knowledge building communities and socio emotional socio cognitive spaces. So and then after we had we had the paper, it was still in the process. But it was at one of the conferences where actually I started talking to Zack swanky. I don't know exactly apprentice last name, I said, Okay. Case, then, you know, we talk more and then, you know, he suggested every known David. And, and he suggested that, you know, based on the work that I was describing, and the way we were coding things, looking at things that, you know, we can do some DNA work on there. And that was really part of my more formal introduction to DNA. And then I reached out to David and he, he kind of pushed it off to Brendan, and so wanting to talk to Brendan and see where this can go. And so then we started communicating and working together. And then I eventually made after doing a lot of preliminary work, eventually made a visit to, to to Madison, where and that happened right before COVID COVID occurred. So I was like, really, at the tail end of when it was okay to travel. And then I'm working with him and his team and you know, I was just running around Episode noac analysis. We ended up submitting the paper right after that trip because the it came together so nicely. And and

actually it was for me, it was like a record I think we submitted in in the end of February and by May the articles already published and we are about to publish in computers education. So that's the main topic today is going to talk about this paper, but the truth is the reason I need to give you the special background is, in order to talk about this paper, I have to talk about this previous paper that Sharon I wrote, because it really gives the context in the setting for the whole paper, it's really all, you can almost see them as a series of two papers deeply connected. And once we get the context in the setting, and then it'll make a lot more sense how we put the Q and Q. So that's really a background for the for the for the talk, and one topic we're going to talk about. So um, so backing up, I'm gonna first talk about this first paper. And to do that, I'm going to start with this idea of htpcs. Just gonna make it rather brief. But to get a sense of what I'm talking about why we wanted to research the emotions and the cognition, or the idea centered space together, and why and why it makes sense to do it. And then and then how that unit came in. So first thing is h KB C's are composed of two parts. There's the KBC, and the humanistic part. So I'll talk about each of them separately, kV C's, I'm not sure how much I'm familiar. So I'll do it relatively briefly, but still give a little bit of background in it. Knowledge Building communities based on the work of smarter, million brighter, which are basically it's a it's a principle based innovation, meaning that there's a certain set of ideas where the object is to engage in a collective effort of knowledge advancement. And so that's, that's kind of predicated on this set of principles, these principles have been written many times or you know, discussed in MVC, there's somewhat arbitrary, that could be 15, or eight principles. But these are the general principles that guide the knowledge building process. And what we generally do is we start basically, with with, when we have a community come together, or maybe they're not a community yet, but um, we start by asking people, you know, under the topic, whether we're talking about human body systems, or ecology, or even, we're talking about learning communities, it's something that I do where the topic is learning communities, even though we're working as a learning community. But any case, we start with asking people, you know, what are your interests, and it really delve deep into that it's not just asking them what their interests are, but we get to know them. And slowly, slowly, that emerges, really what they're interested in, and how this relates to their identity, and where they can take this in their lives and so on. After we do some work in there, the community starts together and saying, Okay, well, we have a lot of people with overlapping interests. And these become inquiry threads areas where the community is going to go and investigate a number of issues that are that they can go and build knowledge for his entire community with people taking a distributed expertise in different groups or different individuals, focusing on different areas with a bigger question or a bigger problem. And in order to advance everyone's inquiry work concept, building on one's up what each other's ideas and rising above the ideas, for example, we need to that requires us to get to know everyone's ideas to read, and to constantly relate to other ideas that already exists, and advanced them. So the Knowledge Forum is the is the proprietary technology that that the knowledge, the Knowledge Building Community uses. And you can see, over here, for example, there's these chains, and the chains are discussion, but a discussion where the ideas, the ideas, or the knowledge is constantly dancing. With each subsequent note, each little square here opens up into a note that people write in and to notes have also linkages to one another. But now the scaffolds that help you kind of tell the relationship between ideas. So in practice, that means we're talking about certain articles or certain shared resources together and discussing them collaborating and discussing them. We're doing a lot of apparatus of collaboration, where there's a lot of unstructured time where people go and do their research, either individually or in small groups. And obviously, these are constantly changing, depending on what the needs are at the moment. And then a lot of sharing knowledge and feedback. So people are presenting to one another, and many different formats, both online and both in face to face when I meet face to face, giving feedback, and so on in order to advance the ideas of the community. And so when we talk about the the socio cognitive dynamics, this is really what's happening here. You know, there's a lot of social elements, it's certainly related more to the, to the ideas and the knowledge of what's going on. So that's the that's the set of the KB C's. And

that's generally what the what the knowledge building community does. And so if we really tried to advance it in some ways, we see this the infrastructure, the H as an infrastructure in order to do this knowledge building Well, we also need to have an infrastructure where, where people are developing, and there's also a it's not just an artist support the knowledge building work, it's also to support the people so it's not just an infrastructure, it's also a role in itself. And we base the idea here on on on the work of Carl Rogers a humanistic movement back in the 1960s. Obviously, it's developed there, the whole active scholarly community around that today. But the idea here is really to advance the identities of The participants and identities are really jointly constructed identities belong to people just as they're they're about to people, they're about people self told stories and other people tell stories, but others identities and those are part of those the complexity of what makes an identity. And so for what we do in encounter groups, though this is based on a on T group sensitive training groups, people who have a background, background and humanistic psychology would understand this really well. But as part of that, is really strong in the 1950s to 1970s, as already said, pioneered by Carl Rogers, and he called it the most one of the most significant social inventions of the 20th century. And I think people that take it really seriously still see how important this is, it's just, it's been somewhat forgotten. And probably the real The reason is, because these underlying ideas are so embedded in culture that they're often taken for granted, we don't stop to think about ideas like the facilitative conditions that Rogers was talking about, things like giving each other a prize, and each other giving each other unconditional positive regard, which really means a truly trusting, believing and other people's being, and knowing what's best for themselves, or trusting their private logic, empathic or active listening, not just listening to the, to the text of what people say, but also the context and the subtext. And giving in by listening to people so actively empathically, we're actually freeing them, you know, they can be less impeded by cultural social restrictions. And then a congruence and authenticity is really about people communicating what it is that they're feeling, and making those two authentic. so that people can be can be non defensive and can act actually, in turn more closely to who they are, it's a process a never ending process. But the process of being being real, is part of the facilitative condition for growth. And for change. These are the three conditions, he called them the necessary but sufficient conditions. But so we spend time getting to know one another. In short, if I had to make this really simple, I'd say we just spent time getting to know one another and building community by appreciating who we are and learning about each other's perspectives. And a lot of the belief that we have here is, the more we know about each other well, the more we can know about each other's ideas, and the more we know about each other's ideas, obviously, the better we can build knowledge. So these two are inextricably linked to one another. And that's why we put such a big emphasis on them. So we'll do things like working in the here. And now a lot of activities where we're focusing on our own interpersonal dynamics, who are we exactly here, we'll do things like just getting familiar with one another. I don't know if any of you're familiar with that johari window, but I won't go into it now. But ways to help each other understand aspects of ourselves that we're not aware of, and other people see, or aspects of ourselves that we're not revealing. And we want to help other people get to know. And then also connected learning activities where we're connecting our lives outside of the current learning situation into the and you know, what people engage lifelong life wider life deeply in their everyday communities? And what how do you bring that into our own course or community. So you can imagine there's a lot of emotions here, I'm going into all that depth really to explain that there's a lot of emotions here, because we're talking about who we are, this brings up a lot of emotional issues, you know, getting to know one another, people often like to be in courses and to be hidden or not to talk and to speed the learner. But everyone really has to go into to talk about who they are and get to know one another. There could be a little bit intimidating at first, but but people generally like her much. And I think it turns out to be very, very successful way to, to do Knowledge Building. In any case, so what we do is we repurpose our, our whole the Knowledge Forum, the way it's used for knowledge building, generally, you have these threads, like I showed you, but we have a hole. Here, you see on the left hand side, and on

the bottom, actually, this is a personal side and a community space. And in the in a personal space, everyone has their own page, this is something that knowledge building community doesn't do. And so they go and they, you know, they put up pictures of themselves, and they have discussions about who they are, and more reflective diaries and that type of work in order to, in order to, again, build this the person centered aspect of the course. So we're doing that. And in total, if you look at how much is spent on the person centered aspect, and the idea centered aspect, we're spending about 50% of the time, and each, as you can see here, this is just like a little visualization to show over 13 meetings, how much time we spend on idea Sen person centered, and, and you can see that it's almost equal. And that's a it's not just a reflection at the end, but it's really taking these emotional ideas seriously and letting the emotional life of the group and the social life of the group really develop. So so I'm saying all that because this kind of gives the background to shares research. So we had a in this particular case, we wanted to research a graduate course. And so what Scheer ended up doing was she took all the 1780 notes The students wrote over the semester, this was just incredible work for a thesis really exemplary work. And she quoted them. I mean, she didn't work alone, she had two other people helping her at times. And it took her I think something like one and a half to two years to do. So it's a really intense amount of time. But she is using a grounded theory in order to try to figure out well, what exactly is what exactly are people talking about here. And ultimately, she found two different cat I mean, the two different kinds of she found, but within each category, she found different subcategories. The socio emotional side things like people were talking about their desire to work together as a community, or sharing your personal feelings about the group dynamics, or are reflecting about a person's personal life outside the community. These were things that were the different six different categories that she found in the socio emotional side, and then six categories, also on the socio cognitive side. But I'm going to focus more on the socio emotional for a moment. Once she had those she gave. And of course, we worked together but but each of the notes a different rating from one to three, based on its depth. In general, each category had something like an elaborated elaborated, and elaborative reflective, it differed a little bit based on the category. But but but what really, I'm trying to say is, there's a lot of work, here ethnographic work being done to understand the story, and to try to really make sense of it, and to try to code it, of course, and to categories to see how things are developing throughout the semester. And, and so for each, and then and then to, and you can see. So for example, for this cutter, there's 36 notes, and an elaborated and 70 and then elaborated and personal and then 69. And that level of personal reflective. So so a lot of a lot of work to just figure out what was going on qualitatively from the story. And then even taking that even a step further, is analyzing that based on the change that we're having. There's many, many chains and the chains have a lot of meaning. And in knowledge building or in just in general, if you think of you know, that, haven't you see a conversation going on here. And the conversations happen in a specific time in a specific context. And generally those conversations happen, and you don't go back to his competence, you have new conversations later. And so so we figured out a way to give these chains certain value. And basically this is the formal use of basically what it means is that a high value chain would be the notes would be really deep, like, you know, very deep reflective and elaborated how many notes in the chain, if the chain was really long for credit is a one or two notes, for example, and the rapidity the intensity of the chain, meaning how fast they are. So they happen within three days, you have 20 notes in three days, that's different than having you know, 20 notes and in two weeks, because it's the intensity really says something about the the conversation and the importance of the conversation that's happening. So we just, obviously, the rapidity and intensity, the shorter the better. So we divided that. But in general, that's how we come up with some sort of value for every chain. And then and here's the here's exactly where the qualitative work comes in. And I'll get to the end in just a moment. But, um, but then, well, you know, shear have made a lot of a lot of insights as to the way this particular community was progressing. And, and I wrote here source anywhere on the internet, because this is a very well known model, there's a lot of different models that explain how groups develop, when they're given a room to develop, meaning if we actually

allow them some freedom to, to to move things and set their goals and move in their own directions, they generally develop in this in this pattern, when they started forming stage where people get to know one another, and generally very, you know, very friendly, but kind of even laconic or are shallow type of talking. And then, and then before they get to the working stage of the performing stage, they need to go through this process, where you know, the people start to vie for control or for the center, they might start not liking one another to master feeling threatened. And so that's the storming stage. And a lot of times we tend to see the storming stage and things that happen, when groups come together something that we don't want to happen, and we tend to just kind of avoid it or or shut up those conversations. But we do the opposite. We see that as a positive thing. And then we really, you know, we write a talk, we talk through and work through the issues that come up until we start to norm, develop norms about how we can talk and how we can work together. And that's when we get to the performing stage, the performing stage or the working stage. You know, for depending how long group stuff can be very, very long once you get there. And then you just continue working there for a long time. Whether we're going to for a long time, until you eventually adjourn some groups never adjourned. They just there's a rotating door in some cases. In any case, in our particular group. This is really unique because they are first thing many of them knew each other beforehand in some different courses. And they would really describe themselves as a learning community but they weren't really a learning community. They were like, you know, very hesitant to open up, they're very polite, and so on, they don't really understand what it means to be a learning community. And, and so for example, in one of the first activities where people have to like share a little about themselves, you could tell that you just ended really fast, you could tell them that this would really open and sharing about themselves. Well, over time, we call them a little bit different names. But it's the same model as the the what I talked about for the transition or the storming stage basically, turned out a lot of group silences, because they're given responsibility to set the goals of the group, a lot of arguing and taking offense from one another feeling discomfort. There was one incident where were around a group silence, I actually I don't have time to go into it, but you know, but people you could tell they felt really uncomfortable. And of course, was not not even knowing this, this theory shear, you know, and by the end was already going in already noticing the kind of general pattern of the group later on, she went and said, Okay, well, we can fit this into this group developmental model. Eventually, the group have worked through their norms, or their work through these conflicts, and they really figured out how to talk and work together, they dealt with their unfinished business from the past, there was even some crime that went on by one particular student, that actually, I think you'd have them twice. A sort of feeling of catharsis, and, and a lot of mutual care. Expressed one another. And then towards the end, you know, as the semester towards the end, the group starts dealing with questions of more about how do we stay in touch, how do we intend ourselves as a group, this is very standard stuff, there's nothing really unique, anyone is doing any type of Nigerian or, or encounter group type stuff. This is very, very, like standard stuff. But what what was really unique here was the coding that sheer did plus the script development thing, we're able to juxtapose them, and and by juxtaposing them, you can see here in this graph, you can see here, the x's are the socio emotional values of the chains. And the little dots are the socio cognitive values of the chains. And then you could see how, in the beginning, the initial stage, you know, there's some things where it weren't. So though, that, that even though number 100, is actually pretty high, those are still pretty good change, even the low numbers could still be some really good exchanges, but in any case, relatively low to what was happening later. And then during the transition or storming stage, you could see there was really, you know, a lot of defensiveness, a lot of difficulty of the group talking to one another unsureness. And then things started opening up as a group went into the working stage, you can really see how things are opening up here, a lot of really deep chains around really deep conversations, both in the quality, the intensity, the amount of people that are responding to them. And you can see that this is what they looked like, just to give me some pictures, the top pictures here are the socio emotional, you know, some change here were like 50, different notes of

people responding to one another. And then also on the cognitive side of people having these really, really rich discussions about ideas and advancing their knowledge. And it was interesting as we really found how these two are developing together. But after having this work, you know, pretty much done. That's when we went and started talking deeply with Brendon and saying, Okay, well, well, how is this going to be? You know, how could we use in a with this stuff? and Brandon was really interested in, in this and the work they were doing and said, Okay, well, let's, you know, continue talking about and think about, and we discussed it very deeply. And then. And that's where that's where we started, realize, well, let's, let's hear focus? Well, first, we need to figure out what we wanted to do. Because there was so much data in such a really rich ethnographic story here. And so what do we want to do here? And then we said, well, let's focus just on the socio emotional aspects here and the group development because that's this is really interesting, especially in an era in quantitative ethnography, there hasn't been a lot of work done on emotions, and maybe this is a nice opportunity. And also, we have a very, very nice story here. And that's something that we can now because we've done all this coding, and because we know that we know about the stages and so on, well, how can we go? And how can we? How can we look at it, look at it from a different viewpoint, sort of like the, you know, the elephant with a blind man with a blind man, the five blind men who are feeling different sides of that different parts of the elephant, and then saying, Okay, well, you know, we were able to see something with a lens of coating, and with a lens of the group development stages, but with DNA, are we gonna able to see something else? And is that going to help us complete the picture, but what this elephant is, and let me just before I continue, how am I doing on time here? How much time do I have? You're perfectly fine. Half an hour. No. So how much more time Sorry? Oh, it's been so like, like, 757 more minutes is okay. Yeah, absolutely. It's fine. Okay. Okay. So I don't have to. Okay, great. So, um, so the first result, we had one, you know, to me, this was just magical. I mean, I was at this point, I was now in Madison. We worked intensely. I think like, some full days of work, and then, you know, just figure out how many countries are going to organize things a lot of preparatory work, and how do we organize the data. And Brendan was really great and saying, Okay, let's organize it like this, and so on. And eventually, we did the comparisons between the different stages and the nodes and, and we got this, this graph that came up and in to me, once I saw this, and this is after, of course, a few different like iterations of thinking of what we can do and looking at some some results, potential results. But once this came out, this was just spoke volumes. Because what this said right here this this little MCE, which is, which is comparing comparing the two, I think Brandon can talk about this much better than I. But they talked about the relationships, that the basically the relationship between the different codes, right that their means, but for each of our two stage was different, which basically, for us, that's huge. I mean, that confirmed that that because because when does that confirm that the stages that we saw qualitatively was based on the relationships between the different codes that the different ways that we coded, the notes, was seeing the same exact relationship. So this confirmed trust, our qualitative analysis. So this is where to come up qualitative to quantitative and we started with our qualitative analysis. And then we went to the quantitative work. And then it showed that, that this is exactly the same story. And this is the same as an elephant. So right away, that was really exciting. And then the factors overlap here between the worker and the final stage with that made a lot of sense, because they're actually that you're still working in the final stage, you're just working with a little focus on the fact that Okay, we're closing Now, what does it mean that our group is closing? You know, there's, there's a meaning to the fact that eventually things end and we have to start dealing with? How do we put closure to this thing that happened, but you're still working in the sense that we're still listening to one another, and we're still respecting and have high degrees of empathy. So it made a lot of sense that there was overlap here with the fact that the transition stage or initial stage were were significantly different and meant a lot to us. So that was our first one. Then the second result came, and then we said, okay, well, we have these different our graphs, each of the different stages. And here you see, for example, the initial stage of transition stage and the working stage. And so so that, then here's really, we went

from the quantitative to the qualitative, because then we started asking the question, well, something's changing here between each of the stages. And what's the meaning of these changes? Meaning what what for what am I from the initial stages of transition stage? What exactly, you know, is happening here, like, how do we see this in the notes? How does this maybe enrich our understanding of the qualitative of poverty, and it turned out to be quite meaningful. So let me just give you an example here. In the transition stage, one of the changes, one of the things that you find here is pretty strong relationship between the students talking about the dynamics and their feelings. So the transition stage, as I said, was characterized by interpersonal conflict, the vie for control, some awkwardness, uncomfortableness, and you see people, for example, I talked about the signs before talking a lot about that, I don't feel so comfortable with the silence, the purpose of the process is not clear to me yet, therefore, it's hard for me to put myself inside of it. So they're talking about their dynamics, and they're talking about their feelings. Or for some parts of the day, I felt less comfortable, I felt embarrassed, I feel like the environment isn't natural, or the activity from the last meeting, and specifically, the discussion around the sounds were frustrating for me, you can see here the top of the dynamics of the group, and they're talking about, they're expressing their feelings at the same time, which is why we have this connection. But then when we go over to the working stage, this connection is much weaker, and the connection is much, much stronger here between the dynamics and empathy. So here in the working stage is characterized by trust and cohesion, risk taking, personal revelation support, care and mutual respect. You see here zere says something like this over the past two weeks of discussion has mostly revolved around those who speak less than share. And I happen to be in this respectable group, I understand and respect what has come up the fact that one chooses not to speak or disagree most of the time, so it does not make me less, less appreciate or less than if you're a member of the group, that is my character, you can force a person to speak through my sons and learn something about you. And it doesn't mean I have no commitment to the group, to or to myself, because I don't talk much, a lot more expressions here of empathy that you find along with the dynamics. And so that so you can see, these are literally in the notes. But this is something that we had no idea about, like we had no, we couldn't see this from our because we couldn't see the relationships between these different the different categories that were the socio emotional categories that we've coded for. And now the, the quantitative and authority or the DNA was able to highlight these difference. And we're able to look at our data in a new way and make some new insights. And that's really what what the paper was really about those two findings. Those two results was really about the paper that we wrote for a computer for a comparison education was about this About how we take those results that we already had a rich qualitative Thunder fee, how we use DNA to want to confirm what it is that what it is that we learned qualitatively. And second, it extended what we can understand qualitatively because now we are we able to see a lot of things that we weren't able to see beforehand. So I think just, I think the discussion, I'd rather open it for discussion instead of saying, you know what I think but I think the, the two potentially strong contribution here to understanding of just for example of emotions, and how groups develop, or how learning communities are formed. So when in the past, when I was looking at learning communities, or let's say someone looking with a, with a group development framework, they would see that they go, and they can characterize each of the different stages. But now actually, we can do them in different ways. Because now we can say, Well, actually, there's different relationships between these different subcategories of emotions. And that's what's characterizing the development of a group. And that adds a lot of information to something that's actually been been researched for a very long time. And it's, you know, very, very well, well researched. So in any case, that's where I want to conclude a minute open up the discussion. But thanks very much for your attention. I'm obviously happy to take part in this discussion. But I feel like it really should be open for everyone. So I'll stop my sharing. And I think

Hendrik Drachsler 31:19

you're done. Thank you very much for this rich information talk. Let's give you the virtual applause. Again, you see some clothing some shoes t hands. Fantastic. I think it's, it's, it's like drinking from the top of the water pipe. So rich information. Fantastic, really well done. And you reminded me on some also established theories that I used and hadn't used so long anymore, but they're very relevant, and I see this year. So I haven't seen any questions in the chat. So give you the moment. If anyone wants to ask directly something to your diamond team, on the first or the second study he presented, then grab the microphone and ask or type it into the chat, whatever suits you best. Okay, then I go with the first question to bridge the timeline for things arise. And one thing I popped up to me and this rich theoretical backup that you have, I was wondering about if this relationship I mean, what you showed us very typical for urinated can show us these relations with x, the nice example that you gave us, between the different codes that we cannot see in a certain in a normal statistical analysis. And that in a brings into this on the surface, and I was wondering about this knowledge building communities that you described. And, and that is computer support code of learning community that really aims to bring in these people and try to script in a way that certain people take roles and also move into different roles and so on, what kind of effect that theory on a theoretical part would have for your analysis. So is it also about designing this knowledge communities that was DNA, you could see how they do and what you need to do to change your instruction to, to help enable the people in that. So that's, that's worse, personal theoretical part.

Yotam Hod 33:28

It's hard for me to discuss on the cognitive side, I'd really like to do I think, probably, but as Khurana head, and, and so on, we didn't really, we still have all these codes, we still have a lot of I think mileage we can get from doing DNA. And in this particular case, study, we, we know it so well. And, and so it's hard for me to talk so much about the knowledge building work. I mean, but but the emotional work is certainly related to that. So getting a group to become cohesive, which deals with a lot of socio emotional issues, I think is fundamental and knowledge building. for India, good knowledge building, people need to know how to be comfortable with one another, I mean, so becoming to the point where they can, you know, in speak away, so we don't become defensive, or even if we do get defensive, get over it, because we trust our relationships, and we have, you know, strong cohesion, and so on. And so, so now I'm thinking about how I would take these different relationships. I mean, in our case, we found these relationships. Post, right, we did this analysis, then we found these posts. Now, what if I had these relationships? First of all, first of all, I mean, I think we have to do more of the theoretical work. This is really just an introduction in terms of in group development, where we're very fast and in group development, we use that as one of our design. Sorry, if I'm explaining this kind of backwards, but as I keep on talking, I keep on understanding the depth of the question and how we can answer this but but group development for us is a framework that we use to think about how to get groups to To build knowledge effectively, especially groups that are just forming and get together, so now I have a new lens or a different way to look at the relationships, or to look at the relationships that are existing emotional relationships and understand what it takes in order to go from one stage to the next. I have not yet done that deep theoretical work and thinking about how these all the I mean, I think we just need to replicate this study with other groups and look at it and a few other settings. Before we can say, okay, we see here a pattern across all groups that every time we're in the forming stage, or, or starting stage, this pattern exists, once I would have that in enough enough cases, then I could say, Okay, then I could really listen to that, and try to pay attention to that, when I'm designing or as a facilitator, and, of course, and try even to use that or to help the group move forward into a different type of conversation, right. At this point, I think we're we don't, we haven't done that. replication enough. It's hard to catch it in real time. Of course, if there was a way to catch in real time through like, you know, you know, imagine we have, and I think this can be done, but we have the notes that are written, so we can already right away, put them in NA and get these

network graphs from the very beginning and see as it goes, and we can use that as a tool, a facilitative tool as we're teaching in real time. We haven't done that. But I definitely see the potentials for both of these two lines that I'm talking about.

Hendrik Drachsler 36:26
Yeah, thank you so much. So I think all the cscl community would benefit from from this insight, because often they miss the emotional aspects that are really crucial for them. Maybe I would I would give the floor Chef fermata for instance, she put a question your mother, you grab the microphone and ask yourself, instead of me reading it out loud?

Marta Jackowska 36:50
Yes, that is totally fine. Can you hear me? Yeah, but we can hear? Well, first of all, thank you for a great presentation. As I wrote there, I have a question of a more pragmatic nature. So as I know, qualitative work, and especially ethnographic creates a lot of quotes. And it can be chaotic. So I was wondering, what kind of tools have you been using, firstly, to, you know, to code the data qualitatively, and then what did you do to transform it into DNA format? I'm personally always struggling with that myself. And I do it manually. So I'm just looking for some good tips on how can I well speed up my process? Thank you. Yeah,

Yotam Hod 37:31
I mean, shear might want to talk about this. And sure, if you want to, you can, you don't have to. But the truth is that I think at a certain point, and we have definitely trying to, you know, using different different tools like, like Atlas, and then there's also that a deuce, I think it is, in the end, we really just ended up using Excel. I know that and this was a huge amount of data. But, uh, I just, I don't know, I mean, that for us, you know, we actually did have, we also, we also want to transcribe the face to face conversations, but but in this case, we had notes and so the notes gave us already discrete kind of discrete chunks to code. And, and then you say, doing it effectively or efficiently. There was nothing efficient about our process. This was totally inefficient. I mean, this took us like, as I said, in the beginning, you shared something like one and a half to two years to do this, which is an incredible amount of time, she was just incredible. She is so dedicated work consistently. And and we even had ever had two people and myself also go in, you'd have weekly meetings approximately, to, to look at the progress and to look more, and we started with one set of codes and went to different, you know, slowly, so those codes transformed until we slowly sharpen them. There's nothing efficient about it, I think the efficiency comes once you have the codes from the grind that analysis, you know, and that now, if some other student comes, says, Okay, I want to look at a I want to look at, you know, something similar? Well, we have a great starting point. And I think that'd be a, you know, a whole different, different beast. But but but, you know, I don't find any of those other kinds of technologies. I think at the end of the day, you just have to know the data, and you just have to send it to get to know it. And there's just no way around it. I think so. I'm sorry, I can't give you any, any tips to be more more efficient. But, uh, yeah, I hope that's helpful.

Marta Jackowska 39:23
Thank you. That's so that's definitely helpful.

Brendan Eagan 39:26
I can I piggyback on that. Oh, so go ahead your time,

Yotam Hod 39:28
I was was gonna say, maybe you want to piggyback on it. So good.

Brendan Eagan 39:32

Yeah, sure. Well, one of the things that, you know, as someone who is often is consulting with doing in QA analyses, one of the things that I love to do is get to work with groups, like Yo, Tom and shear who actually have done a deep dive, even though we were talking about how the cost is high, right? But the value and what how quickly, we could work together and actually iterate and find new insights was so much faster because as soon as I could show a model and reflect and say, Well, what does this mean? New We'll discuss it and going back and getting qualitative examples that they were steeped in. It moved very, very quickly at that point. And so there's there's that tension between how much time you spend developing the codes and what what, you know what tools you use when you're, you're applying them. But the faster that you get them into a format that can speak to the QA tools, the quicker you have that back and forth possible, right. And so I think, I think that there are different approaches that you can take, but as long as you're getting it so that they can speak to one another, then it allows different team members to I mean, apart, I'm getting kind of meta thinking about your time, you know, Ken was talking about this, how quickly we could develop trust, to say, Okay, I'm bringing you this quantitative model, I haven't looked at your codes and your data before, right. But then, then we can quickly kind of get a sense that, oh, we're both getting those. To go back to that elephant metaphor, we both think we're talking about the same thing, we found enough common ground and the models and the understanding, and then that allowed for kind of quicker refinement. So my suggestion would be getting whatever approach that you use to be able to speak to other QE techniques as quickly as possible, I think to Tom's point, too, about the notes made it easier to start from mean Sylvia's done a ton of work talking about segmentation, and how you could with a natural discourse, have different types of segmentation. And all of those can be difficult qualitative decisions. But the more that you're in dialogue with a team that can get at the different aspects of kind of a QE approach, I think, the easier it will be in the long run. But anyways, it was just speaking from from my standpoint, it was a pleasure to get to talk to people who had clearly done a lot of deep thinking and hard work engaging with the data. So I also said about you got to know your data is definitely true, you can get there through a lot of different avenues. But at the end of the day, you need to be reading it and working with it. And there might be some approaches that you can take EA is one of them other coding approaches could get you there faster, potentially. So maybe using NLP like yo Tom was saying you have the C 16 code, maybe you can start to adapt some encoder other NLP approaches to get you a grip on the codes quicker. As you're refining your understandings? I think that's a great question.

Hendrik Drachsler 42:11
Yep, I think I mean, it belongs to many things. Now your data good. I would give the floor to Auntie Mart. She put a question there also about coding. And she spent a year on coding data source that sort of fits pretty well.

42:29
Hi, everyone. Yeah, I spent a year on some we did a year long professional development. And we had eight data sources. Some, most assessments were created for this purpose. And we did them pre, mid and post. And it took a long time we did a lot of coding, what we ended up finding is that we created a disequilibrium code, because this was about teachers beliefs as they went through a professional development of problem based learning. So we how we constructed the, the conversation was important in in a later, but what happened was when there was a conversation, and a teacher spoke about conflicting beliefs in the same sentences, we created a disequilibrium code. And so after a year of coding the data, we put it in D, E, and a, and we had a graph of pre pre teacher beliefs in the middle, and at the end of the PD, and in the middle, the disequilibrium code was attached to every other code. And so that graph was massive, because it had pre beliefs and post belief ideas that they were negotiating. And so it's very interesting, but I agree with our speaker, because it just takes so much time to figure it out. We've never we've I don't think in the research we've

ever seen visually represented teachers who are negotiating two ideas at the same time. And so ama did that we could have never done it without seeing it on E and Ei afterwards. So again, I agree, it confirmed our qualitative data and enlightened aspects we didn't know we had in the data. But my question really was, I like framing it around, you know, knowledge construction, but it's about teacher beliefs. And I'm just not sure I, I have a question. You know, is our three teachers a group? Is that a big enough group to have these dynamics or should I stick with my teacher blades? Um, I. I haven't published this research yet. But I really liked your framework, but I'm not sure I want to give up the teacher beliefs. And so what are you thinking about just three teachers?

Yotam Hod 44:58
Yeah, go ahead. Oh, No, go ahead. Go ahead and do it. Okay. Actually, I'm not sure if it's good that I got my like my

Hendrik Drachsler 45:08
some just, I don't know, really a clear answer to this. But I think it's like the first thing that we said no your data well, and if it's about that three teachers that say the central things you need to investigate, that might be the right group to investigate. So I think it's hard to judge at that level, if this is the correct unit to to investigate. Yeah, I think it really depends on the data and what you want to investigate. If there's a group you need to investigate for longer time or not.

45:41
We did find statistically significant differences from the pre to the mid and pre to the post. Yeah.

Hendrik Drachsler 45:52
So then it's basically like a long time. study that where you investigate these people and how they converge or emerge in a certain way or this verge at the end. And then it sounds reasonable to me without knowing that study any further on it right now? I don't know. David, you have any idea about content traction, that that you could enlighten us with?

David Williamson Shaffer 46:17
No, no good ones? I mean, in general, yeah, of course, you have to you have to know what your The question is. I mean, there was there's a small secondary question here, which is about whether you have enough data points to make any kind of quantitative model makes sense. And that depends on the number of codes and so on. But, but yeah, I mean, I don't actually know the group dynamics literature, or, frankly, the teacher beliefs literature well enough to tell you, which is the right one to use. But you know, the purpose of the purpose of using a framework is to shed light on the phenomenon, and also to use the data to shed light in the framework. So whichever one you think it speaks better to, you're more interested in, that's the one I would go with.

47:03
I think that since no one's seen disequilibrium visually, I think it might be a strong case for that. But I can see my future research, heading toward knowledge construction, especially with what EA can do that I'm finding. Thank you.

Hendrik Drachsler 47:22
I think we have come we'll come up with the next question. We have kind of eight minutes to go before we finish this webinar that there is a there is a potential great finishing question maybe by Maria, who missed part of the talk, but then nicely puts the question they added in a change reshape your quality of story. And I think your tongue, this is what your talk is

about. So it would be fantastic that you highlight this once again. And I yeah, that you put us on the stage. Again, what TNA contributed to your qualitative investigation?

Yotam Hod 47:57
Sure. So thanks, Maria, for the question. And I mean, a lot, it'll allow us to see certain relationships that we weren't able to see beforehand. Very, very simply put, we are we, we had a very good sense, you know, that we will be more than that a lot of skills are confirmed, which gave us which really strengthened our own ideas. But we knew that I mean, we thought we knew, what does it really mean to know, of course, there's always some degree of uncertainty. But we had a pretty good idea that these stages were happening. And now the stages are happening, how they're really related to our codes. If you look back at the first study, I know, maybe you missed that. But the really the relationship we're able to find was we use that those chain values, but those treatment is our I mean, I think if someone was gonna read our first article critically, especially now, knowing what we knew, now, after doing the DNA, you can read it and say, Well, you know, those chains, so they're stronger chains. But they're not really saying anything about that. I mean, they're actually true, because we did code and the things are, the things were more more deep, more deeper, that meaning that part of the part of the, the thing that made them that gave high scores in the working stage of performance stage was because we measured them, you know, with this being an elaborated or elaborated or library reflective. And so there are much more elaborate and reflective, and that happened during a certain phase. But then the but, but but that's kind of looking at each chain by itself, and not putting the story together meaning meaning we we had the sense that the group had moved through these stages, and that sense of how how we had that sense of the group moving through stages was was it's hard to really say, you know, that I mean, I mean, we they're, they're, they're fighting and arguing, and then at a certain point, they were crying and giving each other hugs. So but you know, we didn't count how many hugs they gave and we I mean, we Guess measure what they were writing, and so on. So we had a pretty good idea that they were inventing new stages. But we're now able to go and say, well, when they're writing to one another, what were they? What were they putting the folks I mean, though, the relationship between the codes is that the relationship between the codes is really what changed between each stage. And that, that just adds a lot to the story that has a lot of color to the story that allows us to look at each note and each chain as not just something. I mean, it gives us another another set of glasses on each note and to say, Okay, look, you know, look, what they're what they're touching on, there might be testing in two different nodes or the figure chain, they're talking about a few different things, and in this particular way, and they weren't happening in different stages. Sorry, I don't think that's such a great answer. I didn't do such a good describing. But, but but yes, it definitely helped us out a lot of clutter connoisseurs. And, and you can see that in our paper, we have we gave end up giving illustrative examples. And those are actually very easy to find, meaning, meaning we're able to now pay attention and give new meaning to the different notes. And at the end, that's what it comes down to.

Hendrik Drachsler 51:13
Yeah, thank you for your time. Maria, Did that answer your question? So it helps you confidently from squishing the sense of groups of changes to systemic sense of them as they move from one stage to another? Yeah, I think that puts us nicely. Yeah,

Yotam Hod 51:37
yeah. As I strengthen discharge, it confirmed while we were seeing I mean, in addition to adding color confirmed it, you know, that the when, when when Brendan came and showed us that graph, that was like, Okay, we have I remember that moment, we have a result here, you know, it's not often a result, especially in qualitative research. It's not often where you just say a very one specific woman say, Okay, we have it like you, we know what we want to write. Now, it was more a follow up when you sell things. But it was very clear, once we had

that, hey, this is confirming what we thought we knew. And it's a so it, you know, it's really empowering, I think, for qualitative researcher, but then, of course, taking it further into what it can tell us. I think we really, really started doing that. I think we're, you know, I think, the paper that we were able to publish? You know, I think it I think it gave some good examples of how that can be done and how it can contribute. But I think there's a lot more there to unpack.

David Williamson Shaffer 52:31
Andrea, can I jump in with just a quick follow up on that? Sure. I mean, so yotam, it, I was struck, as you were talking about the first measure the chains was kind of a structural measure, right, it talks about about how quickly and how intensely people were talking, but not what they were talking about. Right. And the NA is sort of showing what they were talking about. And in some ways, both of those results confirmed your underlying idea that there were these phases and these phases had different properties. But the first one, the structural one, felt much more like a triangulation. It was a separate way of looking at the data. It's sort of the classic mixed methods, right? You did this kind of this quantitative and this qualitative, and then you show that they both sort of pointed to the same thing. The second way, it seems like it was much more unified, and that the the quantitative piece was actually speaking directly to the qualitative but is that a minor sort of reading that correctly in your experience?

Yotam Hod 53:33
Yeah, I think that was was trying to say I just having trouble finding words for because it's a good question. And it's, you know, it takes time, probably probably an hour after my drive home today, like, Oh, I should set it like that. So I hate when that happens. But then it gives you I think you said it very well or no?

David Williamson Shaffer 53:48
Yeah. Because I see that is actually the mean. There are lots of people who talked about mixed methods. I think what cute makes QE distinct is exactly that this that. difference, right, is that they're they're actually talking about the very same phenomenon, not talking in different ways about the same about the situation and sort of trying to bring the two.

Hendrik Drachsler 54:16
Great. I think that was a actually fantastic closing. One. We have one minute to go. And I think next burning questions need to be careful the next webinar that Brandon might want to announce shortly, the next one to come up or the land.

Brendan Eagan 54:35
Yes, give me one second. I think the next one, the one in August, I believe is one coming out of our lab. If I'm remembering correctly, I believe that David Williams and Schaefer and Cesar Hinojosa and Cody Marquardt are going to be about different design aspects of QE tool. So it'll be I think, a little bit more akin to a discussion between them rather than as much presentation, but it should be pretty engaging, maybe riffing on some of the building off of some of the discussion that came up. And at the last conference, his keynote from Simon Buckingham shown, where we kind of talked about some of the affordances and what that could mean and how things could be moving forward. Um, so we really hope that you join us for that. We appreciate everyone coming today, and keep these discussions ongoing, maybe folks will join us at the if travel allows, or they people can join us virtually at the international conference for quantitative ethnography in Malibu in November. But I think this is a crucial a crucial area for us to talk about is how do we have ethnography and qualitative analysts informing and shaping how QE works? And for me, as someone who is working on kind of the quantitative side of things, they look at a model and say, yes, this resonates with my deep experimental understanding, working with this data. That's one of the things that one

lets me sleep better at night, but also as exciting and gets me going. So I want to say thanks again to Tom and cheer for, you know, joining and sharing with us today. This is great, and hopefully people join us for the next webinar and also the conference coming up. Yeah, I think it's a great session. Bye bye.