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# Repeated interviews with students – critical methodological points for research quality

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## ABSTRACT

This article presents a reflection on what the qualitative interview method conducted with students can provide to (mathematics) education research in terms of in-depth knowledge and what critical methodological points should be taken into consideration. Repeated interviews with the same students in relation to research quality is considered. The argument is that repeated interviews can provide in-depth knowledge and a grasp of students' understandings. Critical points to consider when gaining in-depth knowledge are person-dependency, process ethics, connections between repeated interviews as a method and the aim, and the re-interview effect. These are important to discuss and reflect on throughout the research process, as they can function as quality criteria when producing in-depth knowledge in qualitative research with repeated interviews.

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## Introduction

One of the most popular ways to conduct qualitative research is to do interviews (Zazkis and Hazzan 1999) and today the interview method has a central position in educational research methods (Brenner 2006). The main purpose of conducting an interview is to discover another person's way of making meaning in the world and the interview begins with the idea that how other people make meaning in the world is important and can provide information and knowledge (Patton 2002). This idea is influenced by the worldview of not only the informants but also that of the interviewer(s) planning and executing the interview. Hence, the interview as a method can be regarded as a 'rather reflexive and critical endeavor' (Radford and Sabena 2015, 178–179). From this perspective on interviews, it is important to consider that the interview essentially begins before the actual meeting with the informants as the interviews are thought about, reflected on, and planned from a certain theoretical approach depending on the aim and research question of the study (Grundén 2017). Then it becomes important to be as transparent as possible when explaining the theoretical approach in addition to the links between the theoretical approach, the aim and research question (s), and the method. This becomes even more important in qualitative research as the two parts – theory and methodology – are often deeply intertwined in the sense that methodologies are often strongly grounded or even arise from theories (Proulx and Maheux 2016). If the link between theory and methodology is clear and if it is clear how the aim and research questions connect to the method, there can be a claim of high quality (Niss 2010). Important to recognize is

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that there is no consensus about general quality criteria upon which qualitative educational research can be judged. This since quality criteria for qualitative research is not as well-known as criteria for quantitative research (Bryman, Becker, and Sempik 2008). Although, some quality research criteria can be regarded as general, or at least traditional. Lincoln and Guba (1985) depict four such criteria: *credibility* which focuses on confidence in the truth of the result and understanding of the context, *dependability* which assesses the research process concerning how it is carried out with attention to methodological conventions, *transferability* which focuses on an exact and thorough description of the research context and clarifications of assumptions made to be able to transfer to new situations with similar context, and *confirmability* which focuses on adequate distance between the researcher and the observed and reflexivity from the researcher in term of biases and influence on data collection and interpretation. These criteria are not to be regarded as universally accepted though they 'have the advantage of parsimony and they are frequently referred to in the literature' (Bryman, Becker and Sempik 2008, 266). Even though there are these traditional criteria it is important to understand is that different perspectives have different ideas about what constitutes quality research (Hammersley 2007). Nevertheless, developing guidelines for quality can help researchers increase the level of agreement (Hammersley 2007).

When opting to conduct interviews to produce knowledge, one can choose different interview methods, both involving the form of interview and the number of informants (Patton 2002). Interviews are often conducted on one occasion with one informant, or on one occasion with a group of informants (Vincent 2013). Another way to use interviews as a method is to conduct *repeated interviews* with the same informants over time. This method is rarely considered or reflected upon methodologically even though it is commonly used in, for instance, ethnography (Vincent 2013). Repeated interviews are used for several reasons: to frame a phenomenon by identifying themes in the answers over time (e.g. Roos 2019), to gain a holistic understanding of a group of people and their context (e.g. Wiltbank et al. 2019), or to focus on changes over time in the informants' answers (e.g. Ebbelind 2020). In this article the first of these three reasons – to frame a phenomenon – is foregrounded. This brings us to the specific aim of this article, which is to explore the qualitative method of *repeated interviews* in (mathematics) education research and to methodologically reflect on it from a quality perspective. The methodological reflection aims to cover both the planning and the actual process of interviewing as well as the processing of the data. Two research questions guide this reflection: What critical points for research quality are important to take into consideration when using repeated interviews over time? And In terms of quality, what can repeated interviews over time provide?

## Views on interviews

Alvesson (2003) points out several different views on the interview as a research instrument used to collect data in research. One view is a neo positivist view, where the context is put in the background and the focus is to create a context-free objective and neutral truth. In this view, there is one reality, and it is framed by a research protocol where the researcher's influence is minimized and the data from the interview becomes a channel to transfer knowledge (Alvesson 2003). Another view described by Alvesson (2003) is the romantic view where the relationship in the interview situation is key. In this view, it is important to be able to frame the expressed meaning of the informant. Interactivity in an interview brings honesty and a more realistic picture of the expressed meaning of the informant. This interactivity is mentioned by Brown, and Danaher (2019), who highlights that the effectiveness of interviews rests on the relationship and level of trust in the interview situation. This is further supported by Vincent (2013) who claims that *repeated interviews* lead to a relationship between the researcher and informant that one cannot achieve with a single-interview research design.

The third view presented by Alvesson (2003) is a localist view. In this view, the context is in focus and the interview is seen as an empirical situation where talk is viewed as situated and produced.

Here the data from the interviews represent a worldview at a particular time and space (Qu and Dumay 2011).

Interviews are used as a method in different research paradigms connected to a specific theoretical approach such for example those connected to constructivist theories or social theories. If looking within the social paradigm a discursive perspective on interviews can be used. This perspective can be interpreted as having a localist view. From a discursive perspective, the interview is a means to identify and explore the informants' practices. According to Potter, (1996, 15), 'An interview can be a particularly effective way of getting at the range of interpretative repertoires that an informant has available as well as some of the uses to which those repertoires are put'. Even though important to recognize is the challenge in the question-answer format which may lead the informant to reflect on certain topics (Potter 1996). From the localist view, interviews do not occur in a complete vacuum but in interaction with the interviewer (Alvesson 2003). In the interaction, the way the interviewer poses questions and acts in the interview situation influences the informants. Following, in this article, the localist view on interviews is taken since it has a social and discursive perspective.

## The objections of interviews – and the possibilities

One critique of interviews as a method is that they are person-dependent creating biased results. One way to meet the critique of bias is to be upfront with what can be biased in an interview and to describe how this may have affected the results (Kvale 1993). Another critique is that reproducibility is hard to reach (Kvale 1993). But one can ask if reproducibility is an important measure of quality in an interview study. Flyvbjerg (2011) argues that although an interview study cannot be replicated, it is nevertheless important because it is a part of the body of knowledge on a certain topic. This contests the stance that if the study is not generalizable then the study has no quality and does not contribute to research development. Interview studies can indeed be generalizable because – depending on the case how it is chosen and the description of the case – the force of example and transferability can create a form of generalization (Flyvbjerg 2011). Another argument in favour of interview studies is that a well-chosen case reflects a subject of special interest that one seeks to understand (Stake 1995). A detailed case study with interviews brings valuable knowledge that goes in-depth about what is being investigated and is important for a nuanced view of reality (Flyvbjerg 2011). In addition to a nuanced view of reality, Alvesson and Kärreman (2000) highlight the idea of investigating the expressed meaning of informants in interviews by highlighting durable and transient meaning. Alvesson and Kärreman (2000) present *durable meaning* as something stable enough to wander between discourses and *transient meaning* as something more unstable construed in the actual interview situation. This can be a discursive way of presenting reality where meaning arises in the space between people in interaction (e.g. Gee 2014). Interviewing the same informants on several occasions is therefore an effective method to grasp both durable and transient meanings (Grundén 2017).

Another issue concerning qualitative interviews and person dependency is the characteristics of the interviewer. For instance, it may be of importance if the interviewer is a female or a male since the informants' views on gender can influence the answers (Padfield and Proctor 1996). Likewise, the social position of the interviewer in terms of for example age and race can be of importance for the same reason, as well as personal experiences and beliefs (Berger 2015). Different characteristics such as energy, neutrality, and self-disclosure can function differently in eliciting in-depth information from informants (Pezalla, Pettigrew, and Miller-Day 2012).

## Ethical aspects of qualitative interviews

Ethical aspects concerning different phases in a qualitative interview are important to take into consideration (Brenner 2006). One aspect is the awareness of the complexity of using interviews in

research and the need to be attentive to the informants (Alvesson 2003). Ethics are present all through the research process from creating the research question to writing the results and form an important aspect of quality in research (Goodchild 2011). Ethical considerations must be made in every stage of the research process and certain questions often arise in relation to interviewing: How will I get close to the informants? How can I research with the informants and give them a sense of being a part of the research without feeling exposed? How can I grasp a process in the field and write it down without offending the informants or the organization? (Roos 2019). Ethics is especially important in the interview situation. The researcher needs to be aware of how to handle relations with informants both professional and personal, and how to handle inside knowledge from the interviews, conflicting roles, and anonymity (Floyd and Arthur 2012). It is also important to consider the power relations between the interviewer and the informant especially if the informant is a child (Christensen 2004) or a student. Therefore, it is important to consider the social agency of the student and what active participation in research involves understanding the expressed meanings of the student (Christensen 2004). Brenner (2006, 361) points out this by stating that the 'protection of the people involved in an interview study is a paramount responsibility of the researcher'.

There is no one right way to interview as no format is appropriate for all types of interviews and research questions (Qu and Dumay 2011). Though it is important to consider what can be biased in an interview and be transparent about it. One way to reconsider transferability is by providing rich data and reflect on durable and/or transient meaning(s), ethical considerations, the setting, and the interviewer's personal style. Qu and Dumay (2011, 247) point out that 'therein lie the challenges for interviewers requiring responsiveness and sensitivity during the interview to get the 'best' possible responses.

### **The setting of a repeated interview study**

This article uses interview examples from a discursive study by Roos (2019) where repeated interviews were used as a method when investigating students expressed meaning(s) of inclusion in mathematics education. The research questions were: What meaning(s) is/are ascribed, and how is inclusion used, in mathematics education research? What meaning(s) do the students ascribe to inclusion in mathematics learning and teaching? and what frames students meaning(s) of inclusion in mathematics learning and teaching? Inclusion was in the study defined as processes of participation using Wenger's definition of participation as a process of taking part and to the relations with others that reflect this process' (Wenger 1998, 55). This implies that participation in the study was about taking part in mathematics education and relating to other peers and teachers in learning situations to enhance access to learning mathematics. Following, inclusive education is about finding ways to meet a diversity of students to enhance participation and access to learning mathematics in education. Access here implies that there might be hindering issues for students to access learning in mathematics which need to be approached in the education, such for instance ways of presenting the content. Access is closely connected to participation and inclusion because when opportunities to participate and relate to others in learning situations in mathematics are enhanced, then it is likely that opportunities to gain access to mathematics learning will also be enhanced.

In the study, the same students were interviewed five or six times during a semester about their participation in teaching and learning mathematics to uncover the student perspective on inclusion in mathematics education. The specifics of the study are described under the sections the school, the mathematics lessons, the students, and the data.

### **Ethical considerations**

An ethical review at the local ethical review board (*Etikommittén Sydost*) was conducted in line with the Ethical Review Law which stipulates that all research concerning human beings shall be ethically reviewed. This law will be applied if the research concerns sensitive personal data if the research involves physical intervention or aimed at physical or psychological stress or there is a clear risk

of harm to the subject (Swedish Research Council 2017). From there an advisory ethical review was received which pointed out important issues when entering the field such as making sure to inform the student and the guardians about both their participation and their right to end the participation at any time. It also pointed out one should be attentive in the selection of students and practice confidentiality. It did not recommend a central ethical review. Following, consents from both students and guardians were selected in which it was stated that participation is voluntary and students who take part can change their mind and leave the project at any time.

It is also important to consider power relations between the adult researcher and the student (Christensen 2004). In this study the role as a researcher was special and there was a need to consider it to get close to the students, meaning the researcher had to gain the trust of the students. In doing so, it was important to consider the students' social agency and active participation in research to be able to hear the meanings of the students (Christensen 2004). It was also important in this process to take into consideration the fine line between the rights of the students to be heard and the rights of the students to be protected in research (Alderson and Morrow 2011). To conclude the researcher has an ethical responsibility that implies much more than merely following the rules (Atweh et al. 2011).

### ***The school***

The selected school is a public lower secondary school in an urban area in Sweden. The school has approximately 550 students and 5 classes in each grade from Grade 7 (13-year-olds) to Grade 9 (16-year-olds). The catchment area is both suburban and urban and there is cultural as well as social diversity. The school has set out to work inclusively meaning its aim is to include all students in the ordinary classroom teaching in every subject and to incorporate special education into the ordinary teaching with no fixed special educational groups. Documents from the school express that inclusion is a core issue for the school, where the teaching and support for all students primarily take place within the classrooms by co-teaching between the teachers and special teachers.

### ***The mathematics lessons***

There was a diversity in the observed mathematics lessons but in general, they followed a similar structure. The lessons generally started with the students entering the classroom and sitting down on assigned seats. There are high tables and high chairs with two students at each table. The tables are placed in three rows in the room. At the front are a whiteboard and a desk and chair for the teacher. On the whiteboard, it is written the time of the lesson and the content for example 'equations'. The mathematics teacher says hello and introduces what the lesson is going to be about. The special teacher is in the room but is not active at the beginning of the lesson. There is an introduction on the whiteboard for example ' $4X-10=50$ '. The students work in their notebooks and the mathematics teacher and special teacher walk around to help the students. After a little while, the mathematics teacher encourages a student to present a solution on the whiteboard and the teacher engages in a discussion of the solution. After this the students get a new task, work on it by themselves and then another student presents a solution on the whiteboard. Sometimes the same procedure is repeated, and the teacher discusses and explains in between. Then sometimes a web-based digital teaching resource (Skolplus) is used. The students are invited to work with the tasks in the programme. After this, the students work with tasks in the textbook. The special teacher and the mathematics teacher help students who need help. The students indicate that they need help by raising a hand. When the time is out the students take their books and walk out of the classroom.

### ***The students***

The selection of students was made after suggestions from the mathematics teachers and the special teacher. They suggested students they perceived as being students struggling to gain access to

learning in mathematics. If the students and parents consented the students were offered to take part in the study.

Interviews from four students are chosen for the exemplification in this article. Edward (Grade 8, 14 years old) and Billy (Grade 7, 13 years old) were chosen because they were perceived as students in access to the mathematics presented, but in need of something else than what was usually offered in their mathematics education to access learning. Ronaldo (Grade 8, 14 years old) and Veronica (Grade 7, 13 years old) were chosen. They were perceived as struggling to gain access to mathematics learning because they struggled to access the mathematics presented in the mathematics classroom. The students chose pseudonyms.

Edward talks about himself as a student that thinks mathematics is easy and does not need much support. He says mathematics works 'automatically' for him and he 'already knows' most of the content in mathematics presented during the lessons. Billy talks about himself as requiring challenges in mathematics and that mathematics is easy for him. Veronica expresses 'Math is pretty hard'. Ronaldo talks about himself as a student with learning difficulties: 'I have difficulties within all subjects and it's like concentration and all that.'

### ***The data***

The data consisted of interviews and observations. Edward and Ronaldo were interviewed six times each and Veronica and Billy five times during one semester. All in all, there were 22 student interviews. The interviews took place in a small room near the mathematics classroom which was familiar to the students. The interviews were audio-recorded. Every interview was preceded by a recent observation of a mathematics lesson where the student to be interviewed participated. The interviews were based on questions about teaching and learning in relation to the observed lesson, with pictures of tasks on the whiteboard or tasks in the book as support for memory. Questions regarding situations in the classroom were posed and these were in relation to teachers' explanations, discussions, groupings, or help from the special education teacher in mathematics. An open interview guide was used with the questions, how was your last mathematics lesson? Was something good? why was it good? Was something bad and why? Was anything particularly easy/hard? How did you understand what you did in the mathematics lesson? Each interview ended with the questions, when do you learn mathematics best? (When? What tasks? What manipulatives?), and do you have something to add? These questions aimed at finding situations when the students meant they participated in the mathematics education or when they felt they didn't and what influenced these situations, hence students' meanings of inclusion.

### ***The interview process(es)***

The students and the interviewer were not acquainted before the first observed lesson. The individual research relationship was commenced in the first interview with each student. Since I was a researcher who interviewed the 13- and 14-year-old students the power relations between the interviewer and the students were considered and reflected on in each interview situation as Christensen (2004) highlights. This was made by reconsidering both the time and space to hold interviews as well as a repeated reminder that they could call off the interview at any time. The timing was important not to get the students to feel interrupted in their daily work at school or being socially excluded from the other students. During the time spent in the field, there was an important research process taking place between the interviews. Before the next interview with the same student was conducted the prior interview was listened to and transcribed as much as possible. This was done to be able to reflect on how the questions were posed and to reflect on the questions and answers in relation to the aim and research questions of the study. Hence, there was an analysis process supporting the development of posing and reframing the questions in the interviewing process between the actual interviews.



## ***Finding the examples***

The examples of repeated interviews with students in this article are chosen from the described study. They are selected because they are representative of a rather large set of data to highlight methodological issues needed to be taken into consideration in relation to repeated interviews and quality aspects of qualitative research. To represent the data set events from interviews from all the four students have been chosen.

## **The examples of repeated interviews and the process in between**

In this section examples of repeated interviews and the research process in between the interviews are presented to show and be able to reflect on methodological issues. In all the interviews the interviewer is equated with the author of this article and in the interview examples below Helena refers to the author. When referring to considerations in and between interviews they are considered by the author. The section is divided into the themes, person-dependency, process ethics, a connection between the interview as a method and the aim, and a re-interview effect.

### ***Person-dependency***

This theme concerns how the relationship between the interviewer and student can develop using a repeated interview method and bring a more realistic picture of the expressed meaning of the student. The theme was construed when looking at how the relationship between the interviewer and students in the study developed between interviews over time supporting the development of the students' replies. One example of this can be seen in the answers Veronica had in each interview about why mathematics was hard to understand and how they developed between interviews. The answers developed from the first interview where she most often replied with only a few words such as yes or no or I don't know to more elaborated answers in the second interview.

Between the first and the second interview, there was a reflection made by me as an interviewer on how to support Veronica to elaborate her answers, and the questions were thought upon not to promote a yes or no answer. The questions were more opened from the second interview and there were follow-up questions prepared. This is an example from the second interview when Veronica talked about getting support when it was hard to understand:

Veronica: Well, it's like you can get it an extra time [the explanation from the special teacher in a small group] ... If you don't get it the first time you get it [another explanation] once more.

The answers got even more elaborated in the third interview when talking about why it is hard to understand mathematics:

Veronica: All the new stuff we do now is not hard but the stuff we did way back in grade one, two, three, four, and five. I can't remember how to do that.

She continued in interview three connecting to why it was hard to understand in the lower grades. This when reflecting on a follow-up question why she thought it was hard with mathematics in the lower grades.

Veronica: We always changed teachers in grade one, and then we changed when we started grade two, we always changed teachers. And the boys in our class always quarrelled, they always quarrelled. So, they [the teachers] never really got to know us, or what kind of problems we had. And then they couldn't help us who had problems.

Another example of person-dependency is when Edward talked about himself as sometimes not valued. When he was asked if he had anything to add in the first interview he responded:



Well, it could be that if you raise your hand during the going-through, it could happen, it often happens, that they let the ones who have difficulties answer because they know ... well, they know that he [i.e. himself] probably knows the answer. So ... yeah ... sometimes you get a little frustrated when you are not allowed to say anything.

In the third interview, Edward said, 'I think it might be that I didn't get to answer one single time. ... It was a little so-so ... Yeah, well, it wasn't the best math lesson'.

In the fifth interview, Edward said that the way the school worked with inclusive classrooms hindered his participation since 'you get hindered by others [peers] and suddenly they can get angry after [a test] if someone did good, and the classroom environment can get a bit prickly.'

If looking at the example of Veronica above, she talked very little during the first two interviews and was low-key in her answers. In the third interview, she opened and replied with more elaborated answers to almost the same question about why mathematics was hard. If looking at the example of Edward, he gave clues to why he was feeling unvalued in mathematics education in interviews one and three, but he waited until the fifth interview to tell me the reason. The reasons for the development in answers can be interpreted as me as an interviewer getting better at posing questions, but also that the relationship developed, and that the interview situation got familiar to both Veronica and Edward. Methodologically it could be seen as three folded why Veronica and Edward developed their answers; firstly, the adjustments and reposing of questions (a development of the interview technique over time), secondly the fact that that they knew me as an interviewer, and thirdly that they felt safe in the interview situation. All these three issues are intertwined and highlight different aspects of this theme of person dependency.

### **Process ethics**

This theme concerns complex ethical issues present in the process of being attentive to the students before, in, and between the interviews. The theme was construed when looking at how to handle inside knowledge from the interviews and the social agency of the students as well as the understanding of the expressed meanings of the students. It was also construed to highlight the importance of respecting the fine line between the rights of the students to be heard and the rights of the students to be protected in research as highlighted by Alderson and Morrow (2011).

Being attentive to the students is very important and considering what is said in the interview situation as confidential. Though is it always for the good of the student not to tell if something important comes into play in the interview situation? Perhaps it is more ethical to tell? This needs to be reflected on and pros and cons need to be considered. This is not specific for repeated interviews it is also present in occasional interviews. What is specific for repeated interviews is the process of ethics in and between interviews and how the interviewer can follow up what has been told from the interview situation. One such example in this study is when I was interviewing Billy. Billy talked in the second interview about the need of being challenged by getting challenging tasks to solve at tests.

Helena: So, you don't get those kinds of [challenging] tasks then ... would you like that?

Billy: Yes, like an extra task, like to take the test and then get another one.

[...]

Helena: How can mathematics be more fun [for you]?

Billy: like more challenge.

Between the second and third interviews, I asked Billy if the information about him wanting more challenges at tests and in the classroom could be passed on to his mathematics teacher and the special teacher. He said it was okay. And after thoughtful considerations of the pros and cons, I told the teachers.

In the fourth interview Billy and I discussed his last written test;

Helena: You had an extra task, or?

Billy: Yes, it was something Oliver [the mathematics teacher] gave me. [...] I had worked with it before at the lesson and I was supposed to write my conclusions [at the test]

[...]

Helena: these last tasks, what do you think about them?

Billy: They are the most fun, I think.

Here the time between interviews enabling for reflections and the fact that Billy could be consulted upon what he thought about informing the teachers was important.

Another example is when Veronica talked about being stressed when taking tests. In the second interview, she talked about being able to take the test in a small group and discuss the test afterward in a small group. 'It feels nice'.

Between the second and third I reflected on this information given by Veronica and if it was necessary to provide that confidential information to the teachers to improve her situation when taking tests. Though, when talking to the special teacher in mathematics she said that Veronica was going to get the opportunity to be in a small group when taking tests and I decided not to share the information from the interview since the teachers already seemed to handle this. In the third interview, Veronica came back to the importance of being in a small group when taking tests and getting to ask questions after taking tests and that she was able to do this. 'It is her [the special teacher] who has us [in the small group] during tests'.

These examples of Billy and Veronica help to construe the theme of process ethics concerning repeated interview situations. Here it is shown how the process between interviews regarding ethics is important to consider, and that the follow up from the interview situation can be both about not telling and about telling depending on the situation and the information provided in and between interviews.

### ***The connection between the interview as a method and the aim***

This theme concerns the links between the theoretical approach, the aim and research questions, the interview as a method, and how this is important to recognize in the process in and between interviews. The theme was construed when looking at how the link between theory and aim helped to highlight the interview as a method and the questions therein in the interview process.

This can be exemplified by how some questions in the interviews were posed and reposed to get the context or as follow-up questions while others were guiding every interview in relation to the aim of the study. One such example was the question *when do you learn mathematics best, when, what tasks, what manipulatives?* This question or a modification of the question depending on the content discussed in each interview was always posed. There were always questions about what was good or bad in the latest mathematics lesson and why. These questions were posed to get close to find out how the students perceived themselves included in the mathematics teaching and learning. Also, when reposing these questions there could be a comparison between interviews which made transient and durable meanings visible. By reposing the same questions, the closeness to the aim and research question could be held.

For example, Ronaldo answered with the word struggle or words connotating to struggle in almost every interview when answering the question about what was good or bad with the last mathematics lesson. In the first interview, he talked about a test and that he had to 'struggle on'. In the second interview, Ronaldo talked about struggling in relation to learning, that he had to 'just go on and struggle'. In the fourth interview, Ronaldo talked about difficult word problems at a written test and said: 'then I just looked at the other questions and then just fuck life therés no meaning, I don't understand anything'.

Another example is when Veronica answered the question what was good or bad with the last mathematics lesson? with the words 'it feels nice' in almost every interview and connecting it to

getting targeted support from the special teacher. In the first interview when talking about being in a small group getting targeted support she said, 'It feels rather nice actually, you get help right away and don't have to sit and wait'. In the third interview when Veronica talked about joining a small group after tests to get explanations, she said 'It feels nice, it actually helps'.

This reposing of the same questions over time helped to strengthen the connection between the interview as a method and the aim by always reconsider the overarching aim of the study and how it came into play in the interview questions. The reposing also helped to reveal important issues for the students' inclusion by identifying transient and durable meanings. In the case of Ronaldo, it is visible that his constant struggle is a durable meaning, which seems to hinder his participation and that problem solving seems to enhance this struggle. In the case of Veronica, it is visible that her getting targeted support is a durable meaning of something enhancing her participation and hence a meaning ascribed to inclusion.

### **Re-interview effect**

This theme concerns how the fact that when the same student is interviewed several times over time it helps to uncover in-depth knowledge. This knowledge provides a nuanced view of reality from the students' perspective of inclusion. The theme was construed when it was observed that not only did the students' answers become more elaborated in the repeated interviews but also new aspects of their participation in the teaching and learning became visible in the fourth and fifth interviews. One example of this is when Edward told me during a discussion in the fourth interview about how he thinks in mathematics and that he has synesthesia:

Edward: I don't know if you have heard of it, but it is synesthesia.

Helena: No, I haven't.

Edward: It is when you see numbers and letters in different colours in the head. So, I have several senses connecting and helping me remember.

I suggested reading some research about synesthesia and get back to Edward the next time we were supposed to meet in an interview.

In the fifth interview, Edward and I got back to discussing synesthesia. He asked me if I had found anything out from research and I presented some results about enhanced memory ability (Rothen, Meier, and Ward 2012) and number cognition concerning colour synesthesia (Green and Goswami 2008). There was a discussion about it and Edward said:

Edward: I think I use it all the time since it helps me remember. I never have to sit down and repeat stuff. If I don't remember, I just use the colours automatically, and then I have it.

Edward also said: It *can* annoy me [if the teacher is using a colour on the whiteboard that don't match with his colour system] actually, but it doesn't as much, I don't have it terribly strong, some people see it, but I just have it inside me.

During the three first interviews, Edward talked about how he easily remembers things and that he thinks in a way that does not always 'fit' with the way the tasks are supposed to be solved according to the mathematics teacher or the mathematics textbook. In those interviews, he never talked about synesthesia.

Another example is from interviewing Ronaldo where he told me in the fifth interview when we discussed when the teacher had presentations on the whiteboard: 'It's so bloody many presentations these times! [...] it's so boring, you can't cope listening!' In prior interviews problems with concentration in relation to learning had been talked about by Ronaldo, but now in the fifth interview, it can be connected to a method in the classroom and how this hindered his participation.

The re-posing of questions in relation to both Edward's and Ronaldo's learning made it possible to get in-depth knowledge which shows there was a re-interview effect. Here it made a positive difference in the results that the students got interviewed several times.

## Methodological reflections of repeated interviews

Concerning a discursive and localist view on interviews (Alvesson 2003) we can see in the examples that the context is important and that the situated talk in the interview is person dependent. For instance, this is visualized in the example of Veronica who gets more and more talkative over time in the different interviews. In the example of Edward and of Ronaldo, we can see a person dependency in the form of trust generating a re-interview effect. This can be interpreted as a threat to objectivity, and one could claim that the result of such an interview is thus biased (Kilpatrick 1993). However, as shown in the examples and as highlighted by Flyvbjerg (2011) these repeated interview situations helped to uncover in-depth knowledge about specific cases and brought valuable knowledge to the study. This knowledge provided a nuanced view of reality from the students' perspective. Therefore, in interviews objectivity may not be a valuable measure if taking the localist view and a *person-dependency* may be a positive thing when connecting it to repeated interviews and providing the context of the situations in the research texts.

The interview situation and the talk produced in the interviews can be seen as situated. Consequently, the knowledge of meanings that can be drawn will be somewhat transient or unstable. In the examples, given that there were several interview situations with the same students (Veronica, Billy, Ronaldo, and Edward), meanings wandered between the different interviews and were identifiable, indicating a form of durable meaning. For example, Ronaldo came constantly back to different forms of struggle, Veronica came back to the nice feeling of getting targeted support and in the case of Edward, it was the meaning of remembering procedures and using the memory and colours (synesthesia) to understand and handle mathematics. Here, from an interviewer's point of view by being able to reflect between interviews I was able to be vigilant to the meanings when posing questions in the interviews. I was also able to reflect, and as much as possible, not impose my categories and constructions on the students.

A critical point when conducting repeated interviews is *process ethics*. In the example of Billy, there was an ethical consideration about talking to the teachers about what had been said in a confidential interview situation. Even though Billy said it was okay that I gave the information I still reconsidered the pros and cons and if it could somehow harm Billy. This because of the obvious power relation between me as an adult researcher and he as a student and a child. This power relation is important to reconsider (Christensen 2004). I chose to tell the teachers since I concluded it could not harm Billy. The following interview confirmed that, since he told me he thought it was fun indicating he was inspired by the challenge. The teachers also confirmed that this little adjustment gave a lot of output for them and Billy. In the example of Veronica, there was also an ethical consideration of telling the teachers she needed a small group when taking tests or not. When I got the information from the teachers that she was going to get this anyways, I choose not to tell since it was confidential. Both examples show the importance of the process of ethics between interviews when conducting repeated interviews.

In all the examples in this article me as a researcher and interviewer being aware and attentive to the students and allowing them to come to know the interviewer became a positive thing. In this way, they are invited to express their meanings. This was evident by the students becoming increasingly more secure and willing to answer and elaborate on questions without the interviewer leading to specific topics. Also, they got interested in their learning process. For example, Edward wanting to find out how his synesthesia worked and why by asking about research about it. Although this familiarity can also be negative if it makes them try to fit their answers into what they think me as the interviewer wants them to say. This shows there is a fine line between being 'professionally friendly' as an interviewer and researcher with ethical considerations towards the students and being 'too friendly'. Another ethical aspect is the importance to consider the fine line between the rights of the students to be heard and the rights of the students to be protected in research (Alderson and Morrow 2011). One can claim that with repeated interviews this fine line can be specially recognized

and reflected upon both in and between interviews because there is time and space to reflect on these ethical issues between the interviews.

Another critical point of quality is to *connect the research questions and the aim to the method* (Niss 2010). In the example of Ronaldo, the reoccurring question about what was good or bad the latest mathematics lesson and why helped to get closer to when he felt that he was participating (or not) in the mathematics teaching and learning and why that occurred. In the example of Veronica, the same question helped to identify targeted support from the special teacher as enhancing her participation. Here the constant reminder in and between interviews about the overall aim of the study helped to keep focus and come back to the main issue of the project in every interview. Drawing from the examples in this article one can claim that quality from this perspective is enhanced by using repeated interviews because of the possibility to reflect on the connection to the aim and research questions between interviews by listening to and transcribing the interviews. This reflection made it possible to reflect on the posed questions and be able to rephrase them from a slightly different angle the next time to come closer to the study's aim and research questions. However, when rephrasing questions, one could claim that there can be what is called in quantitative research, a test/retest effect regarding reliability (Socialstyrelsen 2012). This effect means that by doing the same test over again, the test taker can 'learn' the test, and the reliability is negatively affected. A common way to consider this is to include an exposure to the test in the beginning one or two times called a baseline. The aim is to become familiarized with the test to reduce the test/retest effect and increase the reliability. If comparing the test/retest effect to the qualitative method of repeated interviews, you could talk about an *interview/re-interview effect*. Though in this case the re-interview effect can be positive and increase the reliability because the students get to know the interviewer which has the potential to strengthen the results. Moreover, if conducting more than two interviews with similar questions a kind of qualitative baseline can be claimed. This is the case when looking at the example of Edward. The fact that he got to know me as an interviewer helped to get to know him and his prerequisites. In the case of Veronica, it was important to conduct more than one interview since she replied very shortly in the first and developed her answers the more interviews she made. Hence, the qualitative baseline was vital for the result of the study.

Returning to the research question, what critical points are important to take into consideration when using repeated interviews over time? When using repeated interviews as a method, the critical points to consider are *person-dependency*, *process ethics*, *a connection between the interview as a method and the aim*, and *a re-interview effect*. These methodological critical points are important to discuss and reflect upon not only when being in the field interviewing but also before entering the field and when writing up the results. All these critical points can be addressed and used as quality criteria when producing in-depth knowledge in qualitative research. These critical points can also be helpful in the interview process of producing in-depth knowledge, with both transient and durable meaning(s) covered.

This reflection on critical points for research quality by conducting repeated interviews is limited to repeated interviews that aim to frame a phenomenon by identifying themes in the answers over a relatively short time, such as a semester. There has been no reflection on other types of repeated interviews, such as, for example, gaining a holistic understanding of a group of people (e.g. Wiltbank et al. 2019) or using repeated interviews to focus on changes over time (e.g. Ebbelind 2020). These types of repeated interviews may have other critical points for research quality.

Returning to the research question, in terms of quality, what can repeated interviews over time provide? When doing repeated interviews, if discussing and reflecting upon the critical points as described in this article all through the research process all the critical points highlighted can be used as quality criteria and high-quality in-depth knowledge can be provided.

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No potential conflict of interest was reported by the author(s).

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