Students' ethical agency in video research

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Abstract

The rapid development of various recording technologies in recent years has created appealing opportunities for researchers to document and study science, technology, engineering, and mathematics (STEM) learning in ways which previously were either impossible, high-priced, or impractical. The potential access that low-cost and ever-smaller recorders provide us has been wisely tempered with cautions that researchers critically reflect on whether the benefits of the research outweigh the invasion of participants' privacy, especially in research with children. These cautions rightfully place the burden of ethical deliberation on the researcher. However, by so doing they also direct attention away from the ethical work done by study participants and overshadow their agency in relation to the research. In effect, the cautions join and reinforce dominant narratives of participant, especially children's, vulnerability in research and the researcher as the main ethical actor during the research process. This study seeks to balance such narratives by drawing attention to how children demonstrate their awareness of the audience of nearby recorders to each other and, through such actions, also create spaces for private, out-of-view interaction they do not wish to be recorded. With demonstrative vignettes from a yearlong ethnographic study of children's learning in an alternative STEM learning infrastructure, the study argues that such moments highlight children's ethical agency in research.

Keywords: agency, ethical symmetry, video research, interactional analysis

Introduction

The ability to record, replay and analyze human action has been at the forefront of many fundamental insights and discoveries within science education and the in the social sciences more broadly (e.g., Goldman, Pea, Barron, Derry, 2007; Heath, Hindmarsh & Luff 2010; Tiberghien & Sensevy 2012). Studies using video records as their primary data source have advanced our understanding, for example, of the different aspects of science education within classrooms, like teacher and student interaction or the nature of argumentation in science classroom (e.g., Osborne, Erduran & Simon 2004). Video records have also offered us insights into science learning in informal contexts, like science museums (Stevens & Hall 1997) or at home (Hall & Schaverin 2001). Furthermore, video analysis has advanced our understanding of science instruction in different countries (Stigler, Gallimore & Hiebert 2000) and how videos can be used as part of either pre-service or in-service science teacher education (Sund & Tillery 1969; Brophy 2003).

More recently, new ways of collecting and analyzing video data are becoming increasingly popular as participatory approaches spread within science educational research (i.e., Lundström 2013; Roberts 2011; Riecken et al. 2006; Rudman et al. 2017). While participatory methods have been part of the methodological tool kit of educational researchers for some time (Chambers 1994; Collier 1957) technological advances made in the last decade have significantly changed the extent of the researchers' work and the ways in which they can invite students and teachers to participate in research. Not only has the capacity and durability of different recorders increased exponentially, but at the same time their size, weight and price have significantly decreased as well. In effect, what previously would have been either highly implausible or even impossible to accomplish practically

in terms of data collection, is now not only possible, but also available to a wide range of researchers and research groups. With standard, off-the-shelf consumer video equipment like action cameras (e.g., GoPro), recording students' and teachers' activities and reflections during an ongoing science project, how they engage with different forms of science in their everyday life or community action projects is now more feasible than ever before. In a similar fashion, the accessibility of different publicly available and shared video collections (like YouTube) has also created new opportunities for researchers to study phenomena like teaching and learning in new ways and from new data sets (Derry et al. 2010).

In addition to excitement, these new possibilities have also met with well-founded ethical reservations (e.g., Goldman 2007; Bitou & Waller 2011; Mok, Cornish & Tarr 2015). The core argument of these warrants has been that while technological advances have made it possible to venture into unexplored sites, researchers should be reflexive about the possible ethical repercussions of these ventures and whether or not the potential gains of the studies outweigh their risks. In practical terms, although new video technology makes it possible for researchers to collect data on, for example, how children and youth engage with STEM topics and activities in the privacy of their own homes or rooms, providing them with cameras will also lead to breaching ethical boundaries. Possible scenarios include moments where small and silent recorders become invisible to participants who then do or say things on camera that they did not intend to share with the researchers or when a wearable camera records the participant's usernames and passwords when she or he works on a computer. In other words, more advanced and unnoticeable recorders might invade people's privacy and researchers should take this into account when designing their studies.

These cautions rightfully place the main burden of ethical deliberation on the researchers. Researchers' work often puts them in a privileged position. They can come to know things about the lives of their participants that are not common knowledge, and also potentially harmful if seen by others. In other words, taking part in research redefines the conventional boundary marking what people can know about each other in a way that accentuates the researchers' obligations of respectful and diligent treatment of this knowledge. Where this boundary goes is conventionally defined by the researcher who is more aware of the research process, its needs, possible outcomes and the impact that being involved might have on the participants' everyday lives.

At the same time, however, this emphasis draws attention away from the work that the participants themselves do to maintain and regulate this very same boundary. Although a research process officially starts after formal consent and assent have been given by the participants (i.e., children and their parents), whatever has been agreed on as being the scope of the study does not sustain itself automatically, but rather needs to be upheld along the way and renegotiated if breached. Furthermore, emphasizing the researcher's ethical agency also positions the participants and their competencies in a certain way, as in need of protection by others. More specifically in relation to video research, the cautions rest on a general assumption that during the research process the participants would not be aware of being recorded and, after becoming aware, could not act on this. In doing so, the cautions join and reinforce dominant narratives of participants', especially children's, vulnerability in research without empirically or conceptually exploring the credibility of their assumptions (e.g., Richards, Clark & Boggis 2015). If unchecked, the cautions could impede possible methodological advances in using video methods in research and unintentionally limit our understanding of teaching and learning in the STEM disciplines.

In this chapter, we engage with these assumptions in two ways. First, we draw on conceptualizations developed within the sociology of childhood, and especially in the literature concerning children's participation in research. In doing so, we outline how questions of children's competence come to define and negotiate the boundaries of the research process and how their own participation in research has been treated and conceptualized within this literature. Second, we share demonstrative vignettes from our own ethnographic work that show how children indicate their awareness of the audience of nearby recorders and, through such actions, also create spaces for

private, out-of-view interaction they do not wish to be recorded. Through our vignettes, we broaden the scope of Christensen's and Prout's (2002) notion of ethical symmetry.

Working towards a fuller ethical symmetry

Children's participation in research has been a central topic within the sociology of childhood literature (Christensen 2004; Gallagher & Gallagher 2008). For this broader body of work, the way and extent to which children are asked and allowed to take part in research activities is an important site where different societal perspectives on childhood come to fore, a core interest for childhood sociology. Within this literature, there have been many attempts to come to terms with how the "messiness" of children's participation in research should be treated in ethical ways (e.g., Punch 2002; Komulainen 2007). In other words, researchers have tried to both conceptually and practically deal with situations in which children, for example, express their willingness to be part of the research in multiple different ways, change their mind throughout the research process or change what they want to share with the researchers. The challenge has been to find means that allow researchers to continue working with children in ways that ethically accommodate and engage with this heterogeneity of participation.

The notion of *ethical symmetry*, introduced by Christensen and Prout (2002), was one of the first steps in this process. In their article, after first discussing how the then new perspective of "children as social actors" was impacting the field of social sciences, Christensen and Prout suggested that the best way for researchers to accommodate children's different competencies to be part of the research process, without curtailing their abilities to do so, was to start with the assumption that they were as capable as adults. In other words, by ethical symmetry they mean *"that the researcher takes as his or her starting point the view that the ethical relationship between researcher and informant is the same whether he or she conducts research with adults or with children."* (Christensen and Prout 2002, p. 48). For Christensen and Prout, this symmetry is the starting point for a dialogue between researchers and the participating children about their ways of being part of the research. That is, the researcher and her or his practices should evolve during the research process to achieve a moment-to-moment goodness-of-fit ethically. In addition to this practical orientation, Christensen and Prout also argue that the principle of ethical symmetry should also be seen as a value-based choice that serves to develop and guide shared ethical grounds and guidelines among researchers, within their specific field as well as the scientific community overall.

After Christensen's and Prout's work, other similar relational and process-oriented notions of research ethics with children have been introduced. One such notion is *process assent*. This has been used to highlight how during the research children's wills and wants regarding how, what and when they wish to share their lives with researchers change and the fact that the researcher needs to be reflexive about this before and during the research process (e.g., Flewitt 2005; Aldersson 2005). In a recent article on children's assent, Dockett, Perry and Kearney (2013) explain that:

> "As with consent, providing assent can be an ongoing process, with the decision to participate, or not, renegotiated or revoked at any time (Cocks 2007). This approach is referred to as process assent (Alderson 2005; Cutliffe and Ramcharan 2002; Flewitt 2005) as it involves the renegotiation of assent over the life of the research, as new information is provided or new data are generated." (p. 3)

What the notion of process assent helps highlight and conceptualize is the process of assent beyond the start of the research. As such, it provides for a way to orient to and describe the ways in which children might oscillate between wanting, or not, to be part of the research and negotiating the boundaries of this participation with the researchers.

While both ethical symmetry and process assent have been important contributions to discussions about research ethics with children, their use has been largely limited to situations where the boundaries of the research are negotiated between children and adults (although cf., Dockett, Perry and Kearney 2013; Christofides, et al. 2016). That is, the way in which possible issues of assent, privacy and the boundaries of the research work are handled by children themselves within their peer interactions have not been in focus of previous work. Within studies that employ participatory methods with children, the possibility and importance of such situations are often acknowledged and researchers like Mary Kellett (2005) offer guidance on how to teach children to do ethical research. Occasionally researchers also share narrative examples from their field work on how the participating children have handled such issues or situations. For example, Hilppö (2016), when discussing his own co-participatory studies in which children were asked to document their everyday life with cameras, noted that:

> "Although the need to be respectful of others was emphasized and discussed with the pupils, as was making an effort to frame the photographs so that only consenting persons were shown, the mere fact of pupils taking photographs and looking at them in joint school spaces – something which is not a common practice – created disruptions. On occasion, the participating pupils' playful orientation to the documentation and taking of mock-up shots made some teachers as well as other pupils wary of the research and dubious of whether sufficient attention had been given to the issue of privacy." (p. 32-33)

While such narrative examples are illuminating in themselves, the way in which defining, regulating and maintaining the boundaries of the research efforts are done by the children themselves within their peer interactions have not been in focus of previous work, conceptually or empirically. In the remainder of this chapter, we present vignettes from our own ethnographic work that focus precisely on this issue. In these vignettes, students indicate their awareness of the audience of nearby recorders to each other and how, through such actions, they also create spaces for private, out-of-view interactions they do not wish to be recorded. As such, the vignettes engage with Christensen's and Prout's (2002) notion of ethical symmetry by showing how its scope can be extended to include children's peer negotiations about the boundaries of the research activities.

Student's ethical agency with FUSE

The demonstrative vignettes we share and analyze below come from a yearlong ethnographic investigation into student learning and student experiences of an alternative learning infrastructure called the FUSE Studio (Stevens et al. 2016; Ramey & Stevens 2018). The FUSE Studio is designed to act as an on-ramp for students' interest, discovery and development in science, technology, engineering, arts and mathematics, or STEAM. In addition, the FUSE Studio model also aims at developing students' collaboration skills, creativity, critical thinking and other connected competencies often associated with the broad notion of "twenty-first century skills". The core activities of FUSE revolve around a suite of 25 different STEAM challenges that students are freely allowed to choose from and complete at their own pace. The challenges range from building solar cars, laser mazes and roller coasters to 3D printing jewelry, writing code for video games and designing houses with 3D modelling software.

During the academic year 2015-2016 we collected data in seven different FUSE Studio implementations in three different schools located in a large midwestern school district in the United States. Each Studio did FUSE for 90 minutes a week for the whole year as part of their fifth and sixth grade science curriculum. In the beginning of each session, we asked seven students if

they would wear a visor camera, an action camera attached to a visor cap (see Image 1), while they worked. Wearing a visor camera each time depended on the students' willingness to do so. That is, in addition to formally assenting to being part of the research process in the beginning of the school year, wearing the visor camera was not mandated by the research design, but rather was an opt-in feature of the design. In the beginning of the study, we informed the students that only we, the researchers, would see what was captured on the visor cameras and that our intention was to understand what they did and learned while being in the studio. We also explained that the camera would allow us to follow their learning from their perspective much closer than a long shot camera in the back of the classroom.

During the study, when the students wore the visor camera, we did not regulate or try to control what they did with the cameras, apart from occasionally reminding them to keep the camera with them (if they had taken it off) and making sure that they were recording. Overall, the students' orientation to the cameras changed during the year, shifting gradually from an enthusiastic uptake of the cameras being a standard part of the studio materials with some students to lack of enthusiasm and refusals to wear the camera with others. Some students also gradually moved form a more reserved orientation to the cameras to wanting to wear them toward the end of the year. From time to time the students would play with the cameras by making faces at them and talking directly to them, but mostly, they did not pay special attention to the cameras.

Image 1: Student wearing a visor camera

During the data collection phase, however, we noticed moments between the students where they turned their visor cameras away from some part of their interactions for a short moment but, importantly, continued to use the visors to record their interactions afterwards. In other words, the students seemed to display an intention to limit what they wanted to share with us researchers, but also a commitment to the research process in general. After the school year had ended, to investigate these interactions further, we searched through the content logs (Jordan & Henderson 1995) we had produced during the year for instances where the visor camera was explicitly mentioned as being the focus of the participants. Of the 360 identified episodes most dealt with instances where the camera was handed by the researcher to the participating student or from the student back to the researchers. Because these situations flee outside the scope of our interest, we further selected only situations where the students were interacting together without adult presence and ended up with 45 episodes altogether. In addition to situations where the students played around with the visor camera, our interactional analysis revealed situations where students indicated to each other their awareness of the audience of nearby recorders and how, through such actions, they also created spaces for private, out-of-view interactions they wished not to be recorded. Below, we share two illuminating vignettes of such interactions.

"I can't. I have visor camera"

In the first vignette, two sixth-grade students, Tamaz and Nuri, were working side-by-side on different challenges on adjacent computer stations. Tamaz was wearing a visor camera. He was designing his dream home with an AutoCAD software called SketchUp, when Nuri turned to him and asked:

Turn	*Student*	*Verbal action*
1	Nuri	Tamaz?
2	Tamaz:	Yeah?
3	Nuri:	We are not doing this?
4	Tamaz:	I can't. I have visor camera (whispered).
5	Nuri:	You had it last time didn't you?
6	Tamaz:	No
7	Nuri:	Well it's ok.
8	Tamaz:	We'll do it after. Well, I still need to add the arcade machine into my house.

What took place in this brief episode was a discussion between Tamaz and Nuri about doing something they called "this". While what in specific "this" referred to did not get revealed during the interaction, the way in which Tamaz and Nuri treat the suggestion reveals that doing "this" was problematic because of the visor camera. After a brief discussion about the matter Tamaz and Nuri decide to continue with what they have been doing and postpone Nuri's suggestion to a later time.

In this vignette, students' ethical agency was present in two ways. First, the way in which Tamaz drew Nuri's attention to his visor camera (Turn 4) indicates that Tamaz treated Nuri's suggestion as problematic and in need of being handled somehow. By topicalizing the visor camera and lowering his voice, Tamaz positioned doing "this" as something that should not be captured on the camera. In effect, Tamaz's suggestion opened up a negotiation about the boundary between what should and should not be shared with the researchers and to which side doing "this" belongs to. Tamaz's suggestion also positions doing "this" as being different in this sense from what the students were doing. Second, after Nuri did not initially agree with his positioning of the visor camera as problematic, Tamaz suggested a new way to handle the issue (Turn 8), doing "this" later, probably when Tamaz is not wearing the visor camera. Although Nuri did not explicitly respond to Tamaz, the fact that both of them continue with what they were doing before tells us that Nuri agreed with Tamaz. What, in other words, Tamaz and Nuri accomplish with their interaction is to negotiate the boundary between their personal lives and what they want to share with the researchers.

Emil re-positions his visor

In the second vignette, Emil, a sixth-grade boy wearing the camera, was doing a challenge by himself. Jaden, Amali and Dereck were working next to Emil on their own challenges. While Emil often agreed to wear the visor camera, the three other students had occasionally expressed not wanting to be recorded directly, although they had assented to being part of the research. In the vignette Emil, who frequently collaborated with the three students, acted according to their wishes by turning his visor away from them after realizing its direction. In contrast to the previous episode, in this situation the maintenance of the boundaries of the research is done by physical action alone. Unlike, with Tamaz and Nuri, Emil re-positions his visor camera without negotiating about it explicitly with the other students.

During the studio session Emil had laid the visor camera down on the table, something that the students did from time to time. He had positioned the camera so that it recorded him working on the

computer, but the camera was also directed towards Jaden, Amali and Derek. While Emil was working on his challenge, the following interaction took place.

Turn	*Student*	*Verbal action*	*Nonverbal action*	
1	Emil:		Beatboxes while working on the challenge and laughs to himself	Image 1
2	Jaden:	(unclear)	Turns his screen toward Amali and Derek	Image 2
3		(Amali and Derek laugh)		
4	Emil:		Turns his head toward Jaden and leans over	Image 3
5	Emil:	What does that kong do?		
6		Emil, Amali and Jaden laugh		
7	Emil:		Returns to his screen and turns the camera more toward himself	Image 4 and 5
8	Emil:		Continues working on his challenge	Image 6

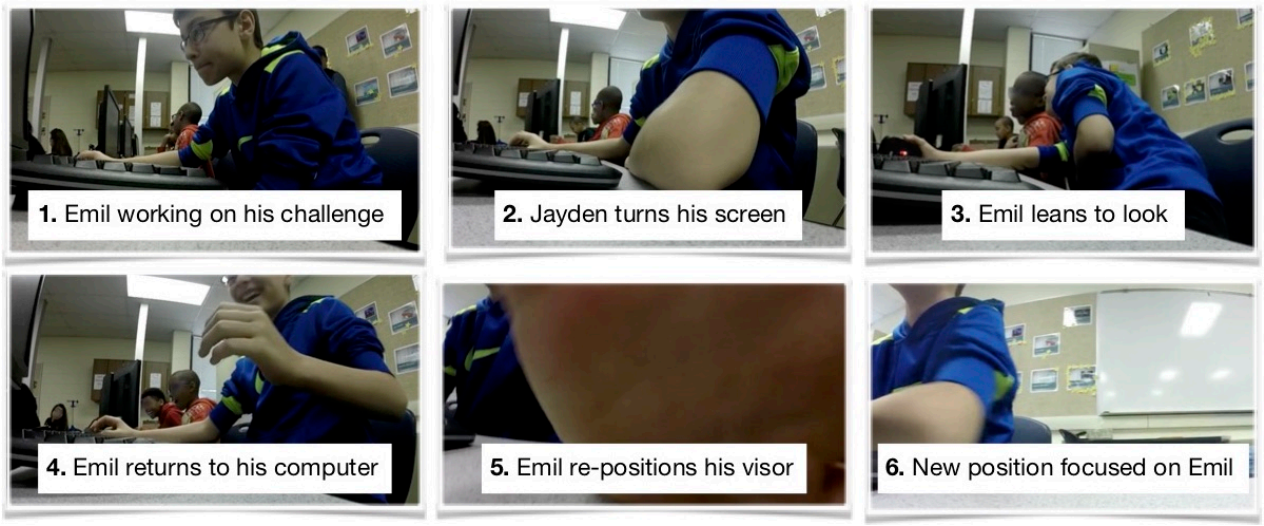

Image 2: Emil re-positioning his visor camera

The episode begun when Emil was working on his challenge, beatboxing and laughing at something on his screen (turn 1). Next, Jaden turned his screen towards the two other boys, Amali and Derek, who laughed at what was on Jaden's screen (turns 2 and 3). Emil then turned to look and leaned in to see what was on Jayden's computer screen (turn 4). After asking about what he sees on the screen and laughing with Amali and Jaden (turns 5 and 6), Emil returns back to face his own computer screen. Importantly, when returning Emil looks at the camera and turns the it away from Jaden, Amali and Derek, but so that it still captures what he is doing (turn 7). After this, Emil continues working on the challenge (turn 8).

Students' ethical agency is present in this second vignette in much the same way as in the first one. Like Tamaz and Nuri, Emil draws a boundary between what the researchers can and cannot see, in this case by re-positioning the camera. However, on this occasion the boundary is redrawn after Emil has realized that his visor camera was directed at the boys. Importantly, Emil's decision to re-position the camera presents a moment in which Emil takes up the responsibility of safeguarding the other students from the view of the camera and hence maintaining the boundary between what is and is not shared with the researchers.

Discussion

Video records of human action have been a valuable resource for producing many of the fundamental insights and discoveries not just in education and specifically in STEM education but also more broadly in the social sciences (e.g., Heath, Hindmarsh & Luff 2010). Through many technological advances, our abilities to record and analyze human interaction have dramatically increased over the recent decades (Downing & Tenney 2008) and these developments are redrawing the ethical boundaries of research work (e.g., Mok, Cornish, & Tarr 2015). In this chapter we have shown, drawing on our own ethnographic video research in an alternative learning infrastructure, the FUSE Studio, how students manage the boundary between what the researchers are and are not allowed to know about their own lives and peer interactions. By highlighting moments of students' ethical agency, we have shown that students are not only aware of the presence of the video recorders and what they are recording, but also how they balance their commitment to the data collection and their own and other students' personal relation to the cameras. Through this work, we have shown how the notion of *ethical symmetry* (Christensen and Prout 2002) can be extended to cover the work that children do among themselves to manage the boundaries of the research. More specifically, our work shows that there is symmetry between the researcher's and the participants' positions in this regard.

Discussions around the ethics of children's participation in research often oscillate between positions that argue for children's vulnerability (and subsequent need of protection) or for their capability and autonomy to participate. Within these discussions, it is often acknowledged that while institutional safeguards, like review boards, mandatory ethics courses and guidelines are crucial in protecting all parties to the research process and making commitments transparent, at the same time they do not accurately represent the ethical deliberation process on the ground (e.g., Sleeboom-Faulkner, et al. 2017). For example, the ways in which access to the research site is negotiated or how consent and assent are often acquired from the participants speak for a relational ethical position that allows to conceptualize the research work as a living–not static–process (Dockett, Perry and Kearney 2013; Christofides et al. 2017; Hilppö, Chimirri & Rajala submitted). If interpreted too strictly, these safeguards can also overreach their protective agenda and impose limitations on the research that hamper the advancement of the field, especially when technological advancements, like with video technology, offer new avenues for the research to explore. Importantly, such overreach also runs the ethical risk of misrepresenting and treating the participants of the research as incapable of weighing the risks of participation and regulating what they share with the researchers themselves. In relation to these arguments, the symmetry we have argued for in this chapter aligns with recent calls that question such assumptions (e.g., Richards, Clark & Boggis 2015) and reiterates the need to conceptualize and present the relationship between the researchers and the participants of the research, also as complex processes.

One possible way to open up and present this complexity could be sharing case narratives of how the boundaries of the research process have been negotiated and managed throughout the life time of a project by the researchers and, for example, between them and a review board. Being transparent about these negotiations would importantly bring to fore the division of labor between the parties in practice and their contribution to securing the ethicality of the research. As such, documenting these processes and sharing them in narrative form would be one way conducting and demonstrating the aforementioned relational ethics in practice. As a practice, such documentation would also easily align with notions like process assent presented earlier in this chapter. These narratives, and the transparency they offer, would also be an important resource for teaching and learning about research ethics and crucially how the ethicality of the research practice is secured when the research project is reaching out to new avenues of research with new methods and technology (cf., Pyyry 2012; Allen & Israel 2018).

Our contribution highlights that an important ingredient of such narratives could also be the ethical agency of the participants, and especially how the participants themselves regulating where the boundaries of the research are. While different ethical safeguards are needed, the boundaries they establish do not maintain themselves and part of that upkeep is done by participants. Highlighting these moments in themselves, as we have done here, or within the overall narrative of the research process could possibly demonstrate how the negotiation of the ethics of the research has not been solely the domain of the researchers. Importantly, such moments represent significant opportunities for us researchers to be more reflexive, analytical and transparent about the ethics of our work. In this vein, our contribution encourages both researchers and gatekeepers, like review boards, to be analytical, not conjectural, when weighing the risks and potential impact of new research technologies, like new forms of video search. That is, identifying, analyzing and reporting moments where the boundaries of the research are explicitly negotiated offer significant avenues for us researchers to be transparent about the ethics of our work and also of our participants understandings of them. By this, our contribution highlights that analyzing such interactions creates opportunities for being reflexive not only about the validity of our methodological choices (Speer & Hutchby 2003; Hilppö, Lipponen, Kumpulainen & Rajala 2017), but also about their axiology in action.

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