# 2 Position

> We should never lose sight of the fact that children and teachers in classrooms are conscious, sentient, and purposive human beings, so no scientific explanation of human behaviour could ever be complete. (Berliner, 2002)

The aims of this PhD are to observe, participate, interpret, analyse, and reflect the social phenomena and the practices that occur when designing and using interactive digital media systems in a specialist school for children with special educational needs. The adoption and dissemination of practice in the second, third and fourth studies of this thesis allow us to see in what ways we can put to work that which has been learnt in the other areas of this thesis, within the real world context of a special educational needs classroom.

This chapter starts from first principles to explain the epistemological position, the methodology, and the methods of inquiry that this thesis adopts as the basis for this PhD study. It goes on to discuss why these are relevant to the social context and research aims of the PhD study. It concludes by discussing some key pragmatic issues about the relationship with the research partner that are essential in realising the goals for the research.

## 2.1  Epistemology

This PhD study is empirical and phenomenological. It starts out from phenomena and builds upwards from them. To study phenomena is not to find out 'what they really are' but to abstract purposefully and selectively from aspects of the empirical evidence and observations to allow interpretation, analysis, and explanation. In this case the phenomena are social interactions.

The aim here is not to put forward a hypothesis, and then see whether it can be falsified or not against evidence of significant cases or a number of cases.  It is to interpret an abstracted, 'pure-type' or 'ideal-type' representation of a single complex 'case' (Weber & Shils, 1949, p. 90).

This position is not put forward as the only one suitable for researching the subject of this thesis; interaction design in a special educational needs classroom. It is put forward as being the most suitable for developing an understanding of the complex and unexpected social actions that occur and arise from the interactions of technology and multiple participants over time within a SEN classroom.

Following Charmaz (Charmaz, 2006, p. 10) this position allows us to critically consider the processes that construct the phenomena being studied over time and allows for unforeseen and unforeseeable consequences of those processes to be included within our analysis. In the remainder of this chapter the methodological position and subsequent methods of inquiry that arise from this position are discussed in relation to the subject under study.

## 2.2  Methodology

The methodology that is adopted here for studying those social interactions, following Max Weber, is an 'interpretive understanding of social action and interaction':

> Sociology … is a science concerning itself with the *interpretive understanding of social action* and thereby with a *causal explanation* of its course and consequences. We shall speak of action in so far as the acting individual attaches a *subjective meaning* to his behavior – be it overt or covert, omission or acquiescence. Action is "social" in so far as its subjective meaning *takes account of the behavior of others and is thereby oriented in its course.*
>
> (Weber, Roth, & Wittich, 1979, p. 4 vol. 1)

Social action takes place within social structures or institutions, and also helps to shape those structures. Institutions are themselves 'meaningful'; they give meaning to and set out expectations and rules, and forms of authority and accountability. They also provide a context within which people can innovate and find new ways to interact.

Social institutions are fields, within which people find a 'place'. Their places are not firmly fixed and their fields can change. Social institutions are not closed. The institutions present their face to the world outside. People are, and must be, involved in and engage in a multiplex of relations with actors within and outside of the institutions. The researcher must engage, to some respects, in a 'methodological closure' i.e. to set boundaries to the phenomena that are to be studied and that can be taken account of.

Social actions have meanings; social institutions have structures; they both have consequences. The researcher must be concerned to ask: what are the consequences, intended and unintended, *of* and *for* forms of social action and interaction and social institutions?

The engagement of the researcher in the social situation, as researcher and as participant in the institution's activities, has consequences for people's actions and interactions and in the ways in which they present themselves to the researcher.

Kathy Charmaz in her guide to grounded theory (GT) as a form of qualitative analysis contends that qualitative research considers the processes that construct the phenomena being studied as they occur over time. This, she argues allows researchers to consider how events develop and also how the interactions between processes connect with one another. The complexity of a social situation lies not simply in the amount of intersecting processes, but in the fact that these processes may be contingent to one another so that the outcomes of their interactions may give rise to unforeseen and unforeseeable consequences. (Charmaz, 2006, p. 10)

This thesis does not seek to build a theoretical framework that would be applicable in multiple contexts, rather it looks to develop a set of concepts that can support a detailed and useful account of the phenomena under study. The approach taken in the four studies presented in later chapters do not strictly follow any one methodology but rather use the appropriate tools and ways of thinking about the phenomena under study offered by grounded theory and a range of participatory design methods to build a coherent and useful account of those phenomena.

## 2.3 Method

The methods of inquiry used in this thesis (observation, conversation, interview, social interaction, participation, and reflection) arise from the methodology (interpretive understanding of social action and interaction). They are chosen for and are appropriate to this study; they are not put forward as a general method for sociological inquiry or design research or indeed as a prescriptive method for pursuing interaction design in a special needs context. The methods of inquiry and methodological approaches used in the studies of this thesis are discussed in detail in *3.6 - Participatory methods in design research and 3.7 - Grounded theory.*

Researchers must adopt flexibility in their research methods. Employing a rigidly structured method of data collection forces researchers to impose ideas of what they expect to find in the situation before they have started their research. This narrows the line of enquiry, places an emphasis on the researcher's view, which may be based on other research, and excludes the views of participants that may be at odds with the researcher. If social situations are contingent on the interaction of multiple processes over time then the researcher must be careful when making assumptions as to what they will observe in a situation.

A study of social phenomena does not begin from nowhere. The researcher should start their investigations with an open-ended vision. Through engagement in the social setting researchers can narrow their inquiry in an iterative fashion. Collecting and interpreting information and the processes that are revealed in doing so refocuses the researcher's questions and directs him or her to look for different information and ask different questions in the research field. An emergent theory is formed based on the information collected, the interactions of researchers and those whom they are studying and their stance towards their research.

## 2.4 A non-determinist approach to interaction design in schools

Underpinning research into the use of technology in education are assumptions that are made about the people and places that are being studied and the relationships between them. They affect the way the research is conducted and the knowledge that is produced. We don't always see these because they operate 'behind our backs'.

As is demonstrated in the literature review, there is a tendency in research on the development and use of technology in education to start from what we want to achieve

rather than where we are. This approach closes down possibilities and our ability to take a critical perspective on the interactions of technologies within educational practice. Where research asks the question 'how do we achieve a pre-defined outcome by using technology', we do not consider that the introduction of a technology will become part of a complex set of interactions between people and place. This means not only can the outcome not be pre-defined but also that the problem itself may change.

Problems arise in research concerned with the use of digital technologies in educational practice when technologies are placed at the centre of the relationship between children and teachers. This is based on an essentialist reading of children as sharing common traits that technology can impact upon and with.  Teachers are cast as operators who deliver the solutions offered by the technology to the children. There is a far more nuanced relationship between teacher, technology and child that should be understood as there are a variety of ways in which teachers, children and technologies interact within a fluctuating institutional context.

The research process takes place within a context. We need to understand the context in which the technologies emerge and how they are affected by and affect that context. The research process may itself reveal unanticipated aspects of the context, and have unanticipated effects on and be affected by that context. The researcher must recognise that any technical intervention that is introduced interacts within a complex social environment populated by individuals and groups of people with a range of abilities and experiences.

A researcher's position should be one of critical engagement with design, building and evaluation of technology and the context in which it interacts and emerges. If we always believe that the technology we introduce will have an overall pre-determined effect then we are left to find ways in which the context must be changed to enable that technology to have the desired impact. This is the wrong way around. The researcher must acknowledge the personal, social and political context. The design/uses of a piece of technology start from that understanding of the interpersonal dynamics and social realities, and the limitations of any intervention within it. That is not to say that technologies cannot offer alternative practices within education but those changes will not come about through the technical qualities of a technology but through a complex realignment of people, place and institution that it may or may not play a part in.

## 2.5   An embedded, longitudinal approach

### 2.5.1  Embedded

An important theme in the approach to research proposed in this thesis is the importance of spending extended periods of time embedded in the school in order to gain an understanding of the context in which their future design interventions will be situated. The aim is that this understanding will be formed spanning three levels. From the lower level of specific students and staff and their interactions in the classroom, through the middle of this particular institution and its functionality, up to the higher level of how technologies can be designed and used for the special educational needs (SEN) classroom context in general.

The desired outcomes are that having developed this understanding and forged strong relationships within the institution, the researcher will be able to design interventions that can address the gathered requirements comprehensively and rigorously. Additionally, gaining extended access to design partners may help to generate more detailed and flexible evaluation frameworks for use when assessing the efficacy of any interventions that are made.

Developing and maintaining routine is important for most children, but is especially important for children with special educational needs. Routine helps children with special educational needs to understand what is required of them, supports them in developing confidence in their and other's abilities and provides a way to structure their lives. Children with Autistic spectrum disorder for example will often react negatively to disruptions in their normal routine. Maintaining routine and order is also an important aspect of teacher's professional practice when working with children with special educational needs. Taking an embedded approach to research helps to mitigate any disruption by embedding the researcher as part of the participant's daily routine.

Finally, conducting design research in this way could result in a lasting legacy with which the participants involved can gain more sustained use and development of the designs or frameworks beyond the initial scope of the project.

Conducting research in a special needs school requires the researcher to negotiate with a wide range of people and institutions with differing responsibilities and sometimes competing agendas.

### 2.5.2 Longitudinal

The research conducted at the two partner schools was carried out over an extended period of time spent in the schools. This longitudinal approach has several important benefits for the goals of the research as a methodological approach. The main aim of spending an extended period of time in each school is to develop an understanding of the personalities and abilities of young people and staff within the school in order that any interpretation of the empirical evidence is done based on sensitivity to the participants and the context in which they work.

This longitudinal approach also allows the researcher to consider the impact of technology over the duration of the study. Instead of visiting the context at the point of evaluation of a technology the researcher works within the context over the duration of the technology's development ensuring that the researcher can draw on their knowledge of participants' attitudes to technologies and the research itself that would be difficult in a much shorter evaluation period. This approach also allows the researcher to constantly assess the success and impact of different methods used in the studies and to refine or change those methods depending on how the pragmatic restraints of the context affect them.

Working in this extended way helps the researcher to develop a tacit knowledge of how well methods and interventions are working or not in the studies. It is hard to quantify this tacit knowledge but it is essential for the researcher to create insightful analyses of their empirical evidence. Spending time with people enables you to develop meaningful relationships and most importantly trust with your participants. By building these relationships you are more likely to increase access to your participants and lead to more informal discussions and observations that might not be possible in a shorter study.

### 2.5.3 Context

Working with and conducting research with any group of young people requires discretion, patience and hard work amongst other skills. When working within a SEN school context we must always remember the sensitive and vulnerable nature of the context and participants under study. This may be an obvious point for those with experience of working in this field. It is nevertheless an important observation because it means the researcher must attend to the diverse and nuanced behavioural traits of the participants and consider how our approach to research might affect those

behaviours. It is very difficult to gain the depth of knowledge that staff in the school; including teaching, pastoral and management staff, have of the students they work with. Thus it is vital that the experience and expertise of those professionals are taken into account.

### 2.5.4 Managing relationships

The management of relationships with the range of partners during the research project requires an ongoing process of clear communication between researcher and partners. It is essential that contact be maintained all the way through the different stages of the research project. Negotiating the initial access to the school is a long and arduous task. Maintaining access regularly enough is equally important. This means keeping in touch with key staff members and updating them on the progress of the research. They can then pass this information on to others such as students, parents and other teaching staff who might be involved in the project. If there is a stage when the researcher is away from the school for some weeks for example, care should be taken to communicate this to all the students and staff that are involved. This is not simply a case of being polite but helps to keep the project in the minds of the participants as the project can easily be forgotten or loose importance within the multiple demands and activities within the school. Maintaining a dialogue with the research partners throughout the research study is imperative to planning and carrying out a successful research study in this context. This negotiation should include: the roles of participants, the resources that will be used and required and the potential outcomes for both the researcher and the research partner.

### 2.5.5 Reciprocity

As researchers we should take on tasks that distinguish us from being mere observers in the school. During my research at the two schools that are the subjects of this thesis, I worked as; a teaching assistant, supported after school clubs with movement classes and A/V instruction, acted as a technical consultant for teaching staff on the procurement and use of new equipment and instigated and ran term length arts projects within the school. By carrying out these supportive tasks I was able to show a commitment not only to my own research aims but also to the school and the participants in the research.

As a researcher and artist I have a wide range of skills that can support the schools, their staff and most importantly the students. For this research project I considered

how I could apply my skills beyond the scope of our research aims to support my partner schools.

Supporting the school beyond the roles demanded by the research was both an ethical and pragmatic choice. The school and its participants are research *partners.* By participating in my research they offered their time, resources and potentially their reputations. As a researcher I then have an ethical imperative to offer something in return.

My decision to support the school as a teaching assistant, artist and technical consultant was also pragmatic. The different roles I took on allowed me to develop trust between myself, staff and students. It enabled me to gain wider access to the school and its facilities than I would have received visiting only for short periods. The reciprocal approach I took meant I could spend extended periods of time with participants getting to know their behaviours and start to consider their ever changing relationships with each other and the school as an institution. This in turn helped me to develop a more nuanced understanding of the context and participants under study. It also allowed me to maintain a relationship with the school and provides the potential for further, post-doctoral research.

## 2.6 Ethics

There are many important and necessary safeguards in place to ensure that research involving children with special needs goes through a detailed ethical approval process. Working with such potentially vulnerable members of society places ethical demands on how, when and why research is conducted. Issues of disclosure, child protection and informed consent are of particular importance.

For each study in this thesis ethical approval was sought and approved by the ethics committee at Queen Mary, University of London, in consultation with the headmaster and participating staff from the partner schools. The inductive, embedded and longitudinal approach taken in all four studies meant that the university ethics committee had to agree to a flexible and extended timeframe for each study. This required careful planning and a detailed explanation in my submission to reassure the committee about their reservations of approving an adaptable schedule for the studies. I obtained two separate Criminal Record Bureau (CRB) checks for the two schools that I worked in because at the time anyone spending extended periods of time with children or vulnerable people was required to have a separate CRB check for each place

they worked in. The lengthy application process and financial cost for this had to be factored into the planning of the study design.

The four ethics committee applications I submitted all shared important ethical considerations; disclosure, equal access and informed consent.

Disclosure: Issues of disclosure are central to ethical practice in research and are of particular concern when dealing with vulnerable participants. One of the main concerns for the studies in this thesis was the production, storage and distribution of images, video and other digital media. I used the participating schools' policy on media storage and distribution as a basis for my own. I kept all data on an encrypted hard drive that only members of the research team could access and view. In the second study I was required to edit out and permanently delete any images or video of one particular student onsite at the end of each session as disclosure of their location would put them at risk. I kept all data from the project on an encrypted drive and ensured that I conformed to the data protection policies of the University and partner schools.

Equal Access: In a special educational needs context it would be unethical to withhold educational activities from children that may benefit them or to introduce interventions that would negatively impact their social and educational development. In all four studies no students or their guardians declined to participate in the research but provision had to be made to ensure that any student who wished to withdraw did not miss out on any teaching or opportunities their classmates were offered.

Informed Consent: Every participant in my research was required to give informed consent. This included all of the teaching staff, children and the institutional consent on behalf of the partner schools. In order for it to be informed consent every participant was provided with information about the study and their part in the study in a manner in which they could understand. I created two different information sheets for each study; one for parents and teaching staff and another for the participating children. The children's' information sheet used symbols and simplified language to explain their part in the study. This was checked and approved by the schools' deputy head. I also spent time during classroom sessions explaining to students what the study was and what part they played in it.

As my university ethics committee explained to me, children under 16 and those with special educational needs could not give informed consent and so consent had to be sought from their parents and legal guardians. I felt that it was still important to explain

and gain verbal consent from all of the child participants to ensure they were aware of what they were doing and being part of. I received signed consent from every person involved in all four research studies.

Planning, writing and receiving ethical approval for the research studies in this thesis was a lengthy and difficult task. Considering how the research process affects the way in which children with special educational needs and those that support them conduct their lives is of paramount importance in the planning and running of research in this field.

### 2.6.1 Anonymising Data

The names of the partner schools, the participants and organisations associated with the research other than Queen Mary University have been anonymised. I have chosen to give all participants and organisations in this thesis names as I felt codes such as STU01 would detract from the flow of the writing. The names have been anonymised in accordance with the terms of the university ethics board that oversees the research conducted in this thesis and the photographic and child protection policies of the schools involved.