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Introduction

Video-based classroom research is opening-up exciting new insights into how teachers generate productive opportunities for student engagement in quality learning, reasoning and the development of their conceptual understandings. For those researching the nuances of the complex interactions and representations that mediate teaching and learning, video offers rich affordances with its capacity to capture these processes in great detail (Flewitt, 2006) and enables researchers to investigate phenomena in more powerful ways. A significant advantage of video is its capacity to capture the full multimodality (speech, gesture, images, symbols etc.) of classroom events. Video also creates a potentially permanent record of events that can be replayed, reviewed, analysed, re-analysed from new conceptual perspectives, and shared with other research teams. Our classroom research has a focus on the ways in which: teachers create rich opportunities for student engagement in learning that involves higher order thinking; and, how students make and communicate meaning utilising the full range of resources available to them.

Video-based classroom research poses a number of challenges including issues of time and costs of capturing quality video, conducting analyses and protecting the rights of participants. Erickson (2006) and others caution researchers that video data are not objective and need careful interpretation taking into account the full range of contextual factors and perspectives. Derry et al. (2010) highlight challenges associated with making decisions about selecting samples of video for analysis and analytical frameworks and processes. Schuck and Kearney (2006) argue that the ethical 'issues of confidentiality and ownership are important and need to be thoughtfully considered by researchers before this new technology becomes ubiquitous in qualitative educational research' (p. 447). Despite these challenges many large scale and international studies are generating video case studies which provide rich descriptions of teaching and learning and we have seen the emergence of video ethnography (Fitzgerald, Hackling & Dawson, 2013) which provides rich documentation of classroom cultures and practices.

To better understand the ethical challenges of video-based classroom research and the protocols that need to be established to ensure that the rights of participants are appropriately protected, it is important to consider how classroom video data are captured and the purposes for which video data are used.

Video data collection

The video research group within the Edith Cowan Institute for Education Research has two approaches to capturing classroom video as part of case study research: taking video recording equipment into the teacher's own classroom; or using special video-enabled observation classrooms.

When equipment is taken into the teacher's own classroom we normally use two cameras mounted on tripods; one follows the teacher and the other focuses on a group of children. Sound is captured using FM transmitter microphones. Part of the classroom not captured on video, the video black spot, is used to locate any children without consent to be filmed. These children can participate in the lesson without being filmed, or if parents prefer, they can be placed in another class for that lesson to receive an equivalent educational experience. Cameras are operated in the classroom for a period of acclimatisation during which the teacher and students adjust to the presence of the cameras and their operators. Once acclimatised, research data are gathered. Complementary data collections typically include pre and post lesson teacher interviews, post lesson student focus group discussions, periodic video stimulated interviews and pre and post achievement measures.

The Education Institute has established video-enabled observation classrooms at one primary and one secondary school. Figure 1 illustrates the layout of the facility at the secondary school. An observation room is connected to two video-enabled classrooms by windows glazed with one-way mirrors that allow observers to see into the classroom. The classrooms are equipped with four video cameras which have pan, zoom and tilt capabilities and are operated by a researcher working in the observation room. Sound is captured with up to four FM transmitter microphones per room. The video and audio data are captured onto complex computer recording hardware in the observation room.
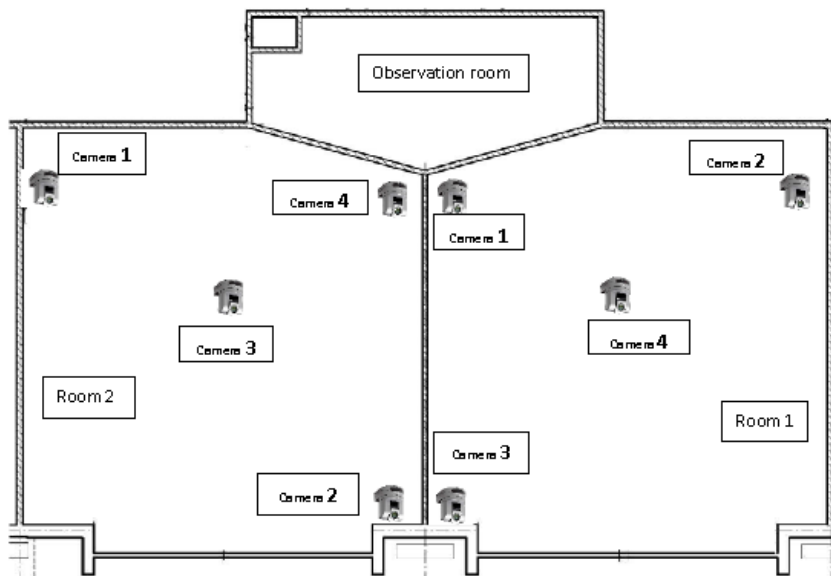

Figure 1. The observation room and two video-enabled classrooms at a secondary school.

The observation classrooms are used by university researchers and by school staff for teacher professional learning purposes. Video research protocols have been negotiated with the Human Research Ethics Committee of the University, the Education Department of Western Australia, and the school boards for the schools at which these facilities have been established. These protocols make provision for video capture used for research purposes and for teacher professional learning.

Uses of video data
The purposes for which classroom video data can be used need to be considered carefully to fully understand the ethical implications of this type of research. Classroom video can be analysed to reveal: the complexities of teaching-learning interactions; what quality teaching and learning look like; how students construct, represent and communicate meaning; and, to demonstrate links between teaching, learning and learning gains. Video data can also be shared with other research groups for cross-cultural studies of teaching and learning, used to communicate research findings and as a resource for teacher professional learning. Derry et al. (2010) explain that video can be used within a research group and then progressively to more distant and wider audiences including undergraduate teacher education, conference presentations, shared with other research groups though a controlled access archive and ultimately shared through open access on the WWW. Not only do these more distant audiences and users have to be very careful about selection and interpretation of samples of video taking into account to context in which the data were gathered, but this sharing of video also raises a number of ethical challenges in relation to these emergent users and uses of video research data.

Establishing video research protocols

There are a number of ethical issues that had to be considered in developing the protocols. These included:

- Separating out protocols relating to video collected for teacher professional learning (TPL) from video collected for research. The practices of using video for research need to comply with research ethics whereas using video for professional learning needs to comply with professional ethics.
- Informed consent for being captured on video and for the users and uses of the video data. Given the range of potential users and uses of video data, researchers need to take great care in identifying the purposes for which the video data will be used and to ensure that information letters and consent forms make explicit reference to these uses and how the video will be made available to users. Where excerpts from video recordings are to be shared beyond the research group, provision needs to be made for participants to give additional consent for the sharing of particular video clips.
- Accommodating students without consent for video recording. There are some students who should not be photographed or video recorded under any circumstances and the schools need to keep a register of these students. There are also students for whom consent has not been provided for a particular research activity. These students need to be accommodated in such a way that they are not disadvantaged, either by placing them in a video black spot within the classroom or by placing them in another class to receive an equivalent educational experience, whilst filming is taking place.
- Identifiability of participants. Video data captures images of participants, their voices and some contextual information which makes the participants potentially identifiable to viewers of the video. Derry et al. (2010) explain that 'although video data are inherently non-anonymous, confidentiality can be protected in many ways, such as by restricting access to the video and to personal information such as the names of the participants or the schools in which data were collected' (p. 36). For those concerned about being identified by the users of the video, they would normally not give consent for participation. The greatest concern of participants captured on video is that some video might capture them in circumstances that would be embarrassing. To avoid potential embarrassment, procedures have to be established to delete such parts of the video data and to allow participants to have the right to veto the contents of any video clips shared beyond the research group.
- Managing the secure storage of video data so that access to the video is controlled. Given the large size of video data files they are normally stored on secure hard drives within computer networks where the data are regularly backed-up. Shared folders are created with password protected access for members of a research team within an institution working with video data.

Key principles and processes

The protocol for video research and professional learning activities address key ethical principles and research processes. These include:

- Parents are asked to sign a standing consent form for the common types of research and professional learning activities to be conducted at the video-enabled classrooms, as part of the enrolment process. This is similar to existing procedures for providing standing consent for children to be photographed
- The school keeps a register of students whose parents have withheld consent for participation in such activities, and of students who should not be photographed under any circumstances.

- An information letter is provided to parents and students for each research project. Parents and students are asked to return a signed form to the school when they do not wish to participate in the research.
- Students who are not to be recorded on video are seated in the classroom in a 'video black spot' or provided with a suitable alternative learning experience in another class. Should a third party enter the classroom while recording is in progress, the teacher should immediately inform them that they are being recorded.
- An information letter is used to inform teachers about the use of video recordings for research purposes and active written consent is sought from them.
- Video files used for professional learning purposes at that school are retained in the PLC under lock and key and are normally destroyed after one month.
- Video files used for research purposes are removed from the computer in the observation room at the school and are stored securely by the Researcher at ECU. The storage, retention and destruction of research video follows the conditions of approval of the ECU Human Research Ethics Committee and any additional conditions required by the Principal of the school.
- Videos used for teacher professional learning are treated with professional respect. The focus is on aspects of best practice that can be learned from colleagues rather than on any perceived deficits in practice.
- The school principal and the teacher have editorial control of the contents of video clips shown at conferences and used for professional learning purposes to ensure that they provide positive images of the students, the teacher's practice and the school.
- Where an incident occurs that is potentially embarrassing to the teacher or students, the video is deleted at the request of the teacher.
- In the case of an incident occurring in a lesson that is likely to be the subject of disciplinary or legal action, the person making the recording: continues recording as the video may be required as evidence; immediately reports the incident to the School Principal and to the Head of the ECU School of Education; and, once the recording has been completed, secure the recording at the University so that a copy may be provided to the Department of Education or Police as required.

In the negotiation of the research protocols with Education Department officials, school staff and researchers there has been a recognition that classroom video captures normal teaching and learning activity which can be made accessible to those outside of the classroom, and that this is potentially low risk if appropriate safeguards are put in place. With the adoption of the protocols as standard operating procedures at the two schools, the Education Department has delegated responsibility for giving access to the school sites for the capture of video data in the observation classrooms to the school principals.

Conclusion

Modern digital video technologies have made possible the emergence of a new education research paradigm, video ethnography. Video-based classroom research has significant affordances related to the capture of a potentially permanent and detailed record of teaching and learning activities that can be analysed and re-analysed using different conceptual frameworks, shared with other research teams, and used for both research and professional learning purposes. Given the nature of digital video data, there are important ethical issues that need to be addressed relating to the identifiability of participants, and the need for fully informed consent for all potential uses and users of the video data. The Edith Cowan Institute for Education Research has managed these issues through negotiating a set of research protocols that have been approved by the University HREC, the Education Department and school boards and have been adopted as standard operating procedures.

Acknowledgements

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