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Using video-reflexive ethnography to understand complexity and change practice.

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Abstract

Background: A range of research methods have been used to understand effective workplace learning in the health professions. The impact of findings from this research usually requires knowledge translation activities in the form of faculty development initiatives, such as supervisor workshops. Far rarer, but with greater potential, are research approaches that concurrently seek to understand and change practice through empowering clinicians to refine aspects of their practice.

Methods: In this methodological article, we describe video-reflexive ethnography (VRE), a collaborative visual research approach that seeks to capture, illuminate and optimise in situ work and education practices. VRE usually has three phases; initial familiarisation with practice through field observations, followed by video-recording of practice, and lastly reflexive sessions about the edited footage with participants and researchers. We discuss four key principles of VRE 1) exnovation, 2) collaboration, 3) reflexivity and 4) care, drawing on our own experiences as researchers using VRE.

Discussion: Although VRE has been used to illuminate and understand health professionals' education, its potential for changing clinical education practices has yet to be realised. VRE enables observation of the social and relational interactions in healthcare practice and empowers individual (and group) perspectives to be articulated and analysed. In this way it can capture the difficult-to-access emotional dimensions of clinical practice as well as the procedural and conceptual ones. VRE

can prompt fresh perspectives and insights into healthcare education and practice for researchers and clinicians through shared deliberations about how practice might be reimagined and enacted.

Introduction

Understanding the synergies between learning and working within contemporary health care environments is a core focus for health professions education research. There is already a strong tradition of researching learning through practice usually based on using a diverse range of data collection methods. These include interviews and/or focus groups with educators and trainees [e.g.1] and real world observation of aspects of clinical and educational practice. [e.g.2] Despite many studies illuminating how trainees learn in and through clinical work and the conditions that might support that learning, key challenges remain. One enduring challenge is how busy clinicians can meaningfully engage in and improve education within the often-competing demands and pressures of contemporary health care work.

In this *research approach* paper, we highlight the potential value of video-reflexive ethnography (VRE) – video footage of practice and reflexive discussions about practice – to health professions educators and researchers. This is achieved by initially presenting a brief overview of VRE and its value in health professions education research. Next we elaborate the four key principles underpinning VRE and dilemmas stemming from them are articulated and elaborated. Finally, practical insights are advanced and illuminated through examples from our own research: Enriching medical trainees' learning through practice. This is not intended to be a '*how to*' paper, our protocol has been published elsewhere.[3] Instead we hope to discuss more broadly the merits and limitations of VRE as a research methodology that can illuminate and bring about changes in clinical education practice. A foundational assumption is that researchers should endeavour to go beyond *understanding* complexity to collaboratively empowering practitioners to *change their practice*.

About the VRE process

VRE is a collaborative visual methodology used by researchers and/or participants, such as health professionals or patients to understand, interpret, and optimise everyday work practices enacted by teams in a naturalistic setting.[4] Reduced to its simplest terms, VRE is about the observation and video recording of practice (the 'video' and 'ethnography' parts of the name); whilst 'reflexivity' involves discussion of the edited footage by those who are most familiar with that practice (usually those in the video footage – clinicians, patients etc.) to refine and reimagine their practice.[5] A VRE cycle usually involves three sequential phases: 1) field observations of practice; 2) video recording of practice; 3) reflexive sessions about practice. These cycles are collaborative, in that participants and

researchers engage with and co-construct the research. Multiple cycles may be conducted with participants in order to track changes in practice over time.

The use of video-recording enables analysis of the physical and social environment, body positioning, eye gaze, and non-verbal cues, thereby making visible aspects of the so called hidden curriculum.[6] This 'grounded' quality of the video permits researchers and participants to see, hear and sense the complexity of practice. In addition, having the front-line practitioners, whose work embodies this complexity, reflect on and talk about and, in so doing, re-evaluate their practice, brings the promise of both personal and institutional change. Given the potential for bringing about change in what practitioners do, VRE also offers the potential to assist in the redesign of clinical practice without the delay in knowledge translation that is characteristic of more traditional research approaches.

The value of VRE to health professions education research

There are two key qualities that make VRE a valuable approach to health professions education research. Firstly, it can capture and account for the complexity of healthcare practice. Secondly, it enables change in practice as well as illuminating it. Hence, it speaks to van Enk and Regehr's [7] conceptualisation of medical education research as a field that has a responsibility to contribute academic knowledge and secure practical outcomes.

When working with complexity, the VRE footage "brings to the fore moment-to-moment lived experiences, the habituations and practical knowledge of participants (professionals and patients) and the tangled realities of everyday care practices."[4] Yet, paradoxically, the images and sound tracks also distances the participants from the acts that were filmed to enable participants to be reflexive.[8] Crucially, our experience suggests that by watching the footage, the complexity of practice remains intact for those familiar with the practices – mobilising participants' sense of engagement, responsibility and agency amongst this complexity. This approach to inquiry is different to interview studies as we know that what people say and what they do can differ, not through malice or lies, but because articulations of practice cannot fully capture the tacit, taken for granted.[9] Hence, VRE has the potential to bridge the gap between what people say they know and the more complex domain of actual in situ practice and experience. This is not to claim that the video recordings are fully transparent, nor that the interpretations are unproblematic. Yet, the video recordings capture the human-human, human-material inter connections and, subsequently, for meaning to be co-constructed between the researchers and participants in ways that can expose and account for the layers of complexity inherent in practice. Within health professions education, VRE has been used to illuminate leadership,[10] feedback,[11] and clinical reasoning practices.[12]

With regards to enabling and empowering change by practitioners, VRE has the potential to allow researchers to engage and interact with participants in different ways. The participatory approach acknowledges participants as co-researchers, emphasising that expertise does not reside elsewhere, but is present within and distributed across the participants and the research team. This emphasis is in contrast with orthodox approaches to medical education research in which researchers are positioned to make recommendations for the clinicians to 'follow' or translate. Therefore, this approach is not about researchers implementing and evaluating top-down strategies for change. Instead, it is a collaborative process where the participants themselves can effect change organically. Examples of VRE's capacity to change practice is evident in the clinical field where it has been used to redesign team communication,[13] palliative care,[14] ward-round practices,[15] and infection control.[8,16]

The theoretical underpinnings of VRE

As with other methodologies, VRE can be used within different paradigms, including: post-qualitative, participatory, or interpretive. The current paper is too short to explore each of these paradigms in depth (for an excellent summary read Lincoln et al. [17]). VRE in the interpretive (ethnographic) paradigm seeks to primarily describe and *understand* practice, without a key aim of changing it (see e.g. Gordon et al.,[10] Urquhart et al.,[11] and Gough et al.[12]). Whilst this is important as the video and the reflexive explanation illuminates 'what is' and 'what goes on'; VRE can also be used to change practice through exploring 'what is possible'.

In contrast to research in the interpretive paradigm, the original proponents of VRE position themselves within the post-qualitative movement building on the key works of St Pierre.[18,19] Post-qualitative researchers question limiting the impact of qualitative research to generating sets of rules and strategies to represent 'participant voice'. Instead, post-qualitative research, moves away from "linear programmes and methodological rigidity, towards more creative approaches that incites possibilities for understanding and reshaping practice."[19] Hence, post-qualitative researchers, claim to build on deep theoretical foundations that are not rule-bound and those that seek to de-centre the human (by taking account of the material) whilst recognising the fundamental and active role of researchers in the research process and outcomes. Employing methods that embrace subjectivity and reject linearity of research design are claimed as means for achieving these outcomes. For example, Wyer and colleagues'[8] exploration of patient involvement in infection prevention and control, utilised affect theory, arguing that to secure changes in practice, participants needed to be 'affected' through participation in the research. They proposed that, to be actors of change, participants needed to be receptive to (or affected by) what they were experiencing by

being more adept at facing complexity and uncertainty. They attuned to participant affect to inform the emergence of data collection and analysis activities.

Guiding principles of VRE

Researchers using VRE in health services research[4] have identified four principles to guide the conduct of VRE: 1) exnovation, 2) collaboration, 3) reflexivity, and 4) care. Here, we explain each of these qualities in relation to VRE broadly, offering insights into dilemmas and tensions we experienced in undertaking our research. Box 1 presents a brief summary of our study to illustrate VRE.

Box 1: illustrative example

Enriching learning through practice[3] – an example of a VRE study in medical education

We chose to use VRE because learning through practice arises by engaging with everyday activities and interactions[20] that can be seemingly invisible to practitioners. Our research project had two aims: 1) critically examine how medical learning through practice in hospital settings is occurring; and, 2) enrich workplace learning using VRE. To that end, we filmed three sites of clinical practice in a large Urban Australian hospital: Emergency Medicine, Medicine and Surgery, and then facilitated reflexive sessions with team members (consultants, trainees, medical students and patients) for them to view and discuss the edited excerpts of what we had filmed. The data set of our VRE research comprised field notes of observation, the video-footage and the transcripts of the audio-recorded reflexivity sessions.

In the observation phase (without the video-recorder), the researchers familiarised themselves with the arena of professional practice and the physical and social setting. We observed in the nurses' station, clinics, operating theatres, around computers on wheels, in patient cubicles, and spent a lot of time in corridors (total of 47 occasions of observation ranging 3-5 hours). This observation was initially about the participants getting to know the researchers (to build rapport and trust) and the researchers learning about the spaces, rhythms, interactions of those being researched. For example, adjusting to the levels of noise in the emergency department, the continuous disruptions, the multiple people and artefacts and the hours on one's feet without food, hydration or toilet breaks were all experienced together.

Judgements were then made about introducing the video-recorder (an iPhone), working closely with participants to create video recordings of them enacting learning through everyday practices (over 5 hours of video). The video footage was co-created through the multiple consent processes and judgements that unfold over time and space by the participants, others who happen to be there, and

the researcher. Participants might discuss particular issues with the researcher as they move about the ward between patients or tasks. The role of the researcher in VRE observation is not so much the 'fly on the wall' but as part of the social setting being investigated and with whom to also be negotiated.[21] These conversations influenced the judgements about what was videoed, for what purposes and who was filmed and recorded and how to handle consent/data when individuals are inadvertently filmed.

Judgements about what to show back, who to invite and how to organise and facilitate the reflexive sessions were fluid and negotiated among the research team. It took approximately 3 hours to sift through video footage to distil each set of clips for the reflexivity sessions, with 5-6clips shown at each reflexivity session (approximately 5-10minutes of total footage shown at each session). Participants were invited to observe the edited video-footage, which was paused after each short clip, to discuss and question what was going on and what they noticed in the video clip (see S1 for reflexivity questions). We conducted some individual and some team reflexive sessions, some had trainees or consultant only, whilst another included mixed participants (median 55 minutes). For patients, the reflexive sessions were conducted with the researcher and patient only often by the bedside (median 10minutes). Other decisions about who to invite to which reflexivity session were based on insider understanding of team cohesion and need for different members to converse in a safe space. From the four teams and 3 specialties a total of 8 patients and 16 staff participated in the reflexivity sessions.

1) Exnovation

Iedema et al. [4] define *exnovation* as "'innovation from within' … [where] innovation arises from within established practice, and from within practitioners', patients' and researchers' collective sense-making of that practice". Exnovation is premised on practitioners' (and others) deliberation and learning about their own practice and results in deriving and designing change through a collaborative uncovering of collective wisdom. Acts of exnovation centre on improving practices based on working with what is already in place, paying attention to implicit local routines, rather than ignoring existing practices.[22] Complexity is characterised by "dynamic and constantly emerging set of processes and objects"[23] which need to be foregrounded and worked with.

Health care is complex and becoming more so through increasing patient comorbidities and ageing population, technological infiltration, specialisation, fragmentation of care, and growing administrative requirements within a defensive wider culture and threats of litigation.[24] Senior health practitioners are simultaneously balancing these demands with safe, quality patient care and educating the current and future workforce.[25] It is in this environment that trainees learn through

practice by working with patients, learning about and from patients in the workplace. However, structured clinical education in hospitals is deprioritised when the demands of clinical practice become overwhelming as is often the case in contemporary healthcare settings.[26] But, addressing these challenges is most likely achieved through innovations in practice that occur as part of everyday practice.

The challenge of exnovation is how to systematically capture such changes in practice when working within the complex adaptive framing of VRE. Evaluating changes of VRE cannot follow a linear pathway of impact – where changes to practice can be pre-defined. Instead, VRE prompts unpredictable effects and personal realisations and responses. Longitudinal effects of practical improvements (i.e. innovations) may be elicited, for example, through follow-up narratives, corridor conversations, before- and after-footage and analysis of the redesign of the materials of practice beyond the VRE. A simple example of the power of noticing can be seen in a study by Carroll et al. [15] where the senior consultants were surprised to see how they intimidated the junior trainees during a ward round. A more powerful example is a recent study that showed raised awareness, changes in behaviour and sustained reduction in patient infection rates following the implementation of a VRE project.[27] The criteria to evaluate change may be as varied as the projects themselves.

In one of our reflexivity sessions (from the example illustrated in box 1), the consultant was surprised to hear the trainees talk about work organisation of clinics in the morning versus the afternoon and how that impacted negatively on their learning opportunities and workload despite him working these clinics regularly. This insight led to a conversation about the potential for re-organising the clinics to enrich learning.

2) Collaboration

A central quality of VRE is *collaboration* between participants and researchers. Participants can be clinicians, learners, patients, their families, administrative staff etc. The level of collaboration can exist on a continuum from the researcher(s) directing the design and the data being co-produced to complete participant-led VRE.[21] In other words, VRE accommodates a wide array of researcher-participant configurations all built on collaboration. Carroll and Mesman [28] highlight three particular styles of researcher engagement with VRE, with slippage in between in real life, the: Clinalyst, Affect-as-Method, and Planned Obsolescence.

In the Clinalyst role, researchers capture and analyse clinicians' 'insider' knowledge by asking 'outsider' questions during the reflexivity session. In this role, researchers have a relatively larger degree of control over the process and outcomes and are not personally involved in the practice.[28]

Affect-as-method comprises the researchers being entangled in the emotions and relationships alongside their participants. Affect drives research decisions and the direction of the research is not a priori contained, for example, VRE was used to promote dignity in dying and the researcher's reflexivity and openness is part of the practice being researched as the researcher is simply another human.[8] Planned obsolescence as the name suggests is where the researchers' role becomes redundant, where VRE is transformed from an event associated with a visiting researcher into a proactive weekly or monthly meeting leading to health professionals themselves taking the researcher role. This latter role can clearly be an approach for faculty development in health professions education, where educators in healthcare settings might video a bedside learning encounter and share this on their phone with their trainees, students and patients to discuss what is being done and how it could be done better. This is even more likely as technology becomes smaller and easier to use.

In our research, we adopted the Clinalyst researcher role. We needed to balance between what and where senior clinicians wanted to film to what they perceived was 'effective teaching' or 'teaching moments' and not necessarily what we thought were rich 'learning' moments with patients. The consultant might comment at the beginning of a ward round to the researcher – "you won't see any teaching today as it's a busy service round". Yet, there were still multiple examples of clinical teaching and learning in the videos that prompted conversations about learning versus teaching with participants. This focus and preceding conversation required delicate negotiation and trust building.

The researchers' role is faced with multiple ethical dilemmas. In our study, two clinically-informed research team members engaged in this decision-making. They also work in the same hospital and thus could be considered as insiders, yet do not routinely work with clinical staff, so also have outsiders' perspectives to catalyse insiders' knowledge through sharing videos and promoting reflection on practice. The researcher (JH) leading the filming in Emergency is a social worker who used to work in that department. She is known to, respected and trusted by many of the senior doctors which enabled access to the setting/practice. Yet, it placed her in situations of dilemma when consultants sought advice about arranging accommodation for a homeless teenager, or support to a distressed patient or to them after a particularly tough shift. As a team we talked through these situations knowing that the assigned researcher 'roles' do not overtake existing relationships and to use professional judgement to decide in the situation, as would be the case in observational research.

3) Reflexivity

Reflexivity has been described as "… a shared, social deliberation about existing circumstances and practices such that these are apprehended from new perspectives and in new ways." [4] Creating new insights, new ways of being and new social realities are potential outcomes from practitioners viewing and discussing videos. VRE researchers use the metaphor of diffraction as participants may take the discussion in their own way.[29] Viewing the videos is not necessarily about identifying errors. Instead, some might be impressed by what they see.

There are many decisions related to reflexivity sessions that raise dilemmas from what to include in the videos reviews, how to focus, who to invite to what, what to notice, and where to conduct. For example, to involve patients in reflexivity necessitates researchers returning to the bedside to show patients the footage and garner their perspectives on what they notice. There is a need to be respectful of the practices being enacted, particularly when practitioners might conclude their practices are not represented in the footage being shown or perhaps even misrepresented. This is where participatory decision making about what practices are relevant and what footage is shown is important.

In our study, we deliberated about facilitating one reflexive session for the trainees and another for the supervisors. For pragmatic reasons (i.e. dependent on participant availability and participant comfort) it was decided that we would conduct some mixed sessions, which prompted illuminating conversations from both parties.

4) Care

Care for participants matters throughout the research as it unfolds in-situ. Showing clips of practice can be confronting. Participants may feel particularly vulnerable with others in the team discussing their practice. Iedema et al. [4]refer to it as ensuring participants' psychological safety. Participant reactions to the footage when surrounded by colleagues cannot be fully anticipated. Hence, all video clips intended for the reflexivity sessions were returned to participants to seek consent specifically for showing and to whom. This process may need to be repeated more than once. Therefore, staged or layered consent processes are required and potentially contentious boundaries of roles and representation that are common to visual research need to be carefully traversed.[30]

Care is important for the researchers too. Observing healthcare can be confronting, for example hearing about sexual assaults, or matters that may have a personal significance to the researcher. In our case where JH was back in the same cubicle where she had taken her own child to receive care on a previous occasion. Reflexive journaling and a supportive team are important in researcher self-care.

Practical considerations of VRE

VRE is a methodology that goes beyond written, oral or visual description and engages practitioners in critical appraisals of how they think and act in naturalistic settings and through authentic instances of their practices. Consequently, it needs to be voluntarily engaged in by practitioners, carefully planned and sensitively implemented. Participants might embrace the VRE process resulting in a dialogic and reflexive manner whilst others might engage in more boundaried and distanced ways.[31] The hierarchical nature of health care and the continuous consent process influences what is filmed, what is shown and how the discussion unfolds with potentially uncertain outcomes. Therefore, VRE can be highly effective for researchers able to cope with uncertainty and emergence in the research and are willing to adapt to the demands of the practices and the people and spaces involved.

In terms of procedures, the flexibility persists. There are no rules around the number of hours of observation for each phase or how many participants are 'right' – as is the case with qualitative research generally a decision about sample size is one of professional judgement and pragmatics. [32] Multiple reflexivity sessions might be needed, sometimes at the end of the day, by the bedside, in the corridor, capitalising on when the participants are available.

Having insider support for the research is essential in providing access to participants and building institutional and team confidence in being able to enact these procedures. Through a letter of support provided by the Clinical Director, the ethics committee was assured that the research was supported by the department. The VRE approach is resource intensive for researchers and busy clinicians, and yet despite this, there are increasing examples of VRE research in the health and health education fields which attest to its value for empowering practitioners through learning about their practice and potentially changing practice. All of this indicates the importance of engaging with clinical staff, building their confidence and informing them of the procedures and potential risks of this process, as well as the kinds of benefits that have been proposed above.

Conclusions

This paper speaks to health professions educational researchers about the value of using VRE as a tool for understanding practice and for reimagining/changing it. Video-reflexive ethnographers seek to make visible and intervene in the complexity of everyday workplace interactions. It is not about making the complex simple, easy or offering singular solutions, but it is about seeing and making meaning about practice in some of its complexity. VRE as a methodological approach uses footage of practice to: 1) focus participants' and researchers' attention, 2) engender reflexivity and 3) promote

deliberative dynamic change. Hopefully, through the case made here, its value for making visible and reimagining the complex practices of health professions education and then carefully planning and enacting its use will be taken up by others.

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