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Using video and dialogue to generate pedagogic knowledge: teachers, learners and researchers reflecting together on the pedagogy of social research methods

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Developments in pedagogical knowledge in the teaching of social research methods have largely been generated through teachers reflecting on their practice. This paper presents an alternative approach to generating data through reflective dialogue between researchers, teachers and learners. The approach incorporates elements of video stimulated recall and reflective dialogue within focus group interviewing. The rationale and affordances are discussed in relation to the goals of discussing teachers' pedagogical decision-making and learners' experience of, and response to, various pedagogical practices. The context is a study of capacity-building short courses in advanced social science research methods, specifically courses on: multi-modal analysis, computer-assisted qualitative data analysis software, multi-level modelling, and systematic review. The paper examines the methodological challenges of capturing the everyday realities of methods classrooms for teachers and learners and the affordances of using dialogue on observed teaching sessions to gain further insight into each other's thinking and action. It concludes with lessons learned about methodological and pedagogical processes and an argument about the value of bringing methods and standpoints together in creative dialogue.

Keywords: pedagogy; research methods; video; focus group; social science

Introduction

A need has been identified in the UK (HaPS, 2010; Lynch et al., 2007; McVie, Coxon, Hawkins, Palmer, & Rice, 2008), Europe (Kottmann, 2011) and beyond, to build capacity in both the development of advanced research methods in the social sciences and their application to challenging research problems. Building that capacity requires investment of resources and considerable attention has been paid to the organizational elements (Moley & Seale, 2010; Payne & Williams, 2011). Building capacity also demands attention to the ways in which methods are taught and learned and to enhancing pedagogical knowledge among those involved. The research literature on the pedagogy of advanced research methods is relatively limited indicating that more research is needed to stimulate a pedagocial culture (Earley, 2014; Kilburn, Nind, & Wiles, 2014; Wagner, Garner, & Kawulich, 2011).

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The research discussed in the paper started from a premise that better understanding of the pedagogical demands of teaching research methods is needed, particularly in relation to short courses in advanced or innovative methods that are key to the UK Economic and Social Research Council strategy. This includes understanding the particular pedagogical practices and pedagogical content knowledge (PCK) (Shulman, 1986) associated with advanced social science research methods – how those with advanced methodological competence translate their knowledge of methods into a form that others can comprehend and use. Our research questions included:

(1) What distinctive pedagogical challenges arise in teaching advanced, or innovative, social science research methods?
(2) How do teachers and learners respond to those challenges?
(3) What is the nature of teachers' PCK and learners' insight into this?

We aimed to address these questions by engaging teachers and learners in pursuing pedagogical understanding with us. In taking their knowledge seriously we were treading a balance between not wishing to 'distort, destroy or reconstruct' (Fenstermacher, 1994, p. 11) that knowledge and wishing to inform rather than merely illuminate knowledge and practice. Thus, rather than just treading softly, we were directly engaged in the methodological challenges about how to involve, rather than pass judgement on, research methods teachers and learners. Consequently, the research had elements of partnering in dialogue for knowledge creation.

The first, *expert panel* component, adapted from the work of Galliers and Haung (2012), was concerned with gaining broader or more conceptual insights into knowledge, views and experiences related to methods teaching and learning. The second, *close up* component was concerned with specific knowledge generated in relation to particular teaching and learning events. This involved using video stimulated focus group discussion with teachers and learners immediately following observed and recorded methods training and is the focus of this paper.

The challenge

Shulman (1986) drew attention to how content is taught as a missing component of education research, and particularly to questions of how teachers formulate explanations, decide on content and how to represent it, ask students about it and respond to misunderstanding. Shulman acknowledges teachers' expertise in the content they teach as a starting point for their teaching, but urges pedagogical research to focus on how this expertise is used in terms of process and becomes transformed into a form that is comprehensible to learners. Thus, alongside other knowledge (of content, curricula, learners, educational 'ends'), he proposes that teachers hold a mix of general pedagogical knowledge ('those broad principles and strategies of classroom management and organization that appear to transcend subject matter' [Shulman, 1987, p. 8]) and PCK which is pedagogical knowledge specific to the subject matter. PCK has become an established concept in teacher education, enhanced within extended models (see Kind, 2009). Only occasionally has it been questioned in terms of being too static (Banks, Leach, & Moon, 2005) or regarding whether content and pedagogy are more inherently imbued with each other than the concept implies, in that 'knowledge is … always already pedagogical' (Segall, 2004,

p. 291). In the arena of teaching advanced social research methods, teachers' subject matter knowledge comes from their familiarity with the methods in the context of applying them and from their own advanced methodological literacy. This may inherently shape their pedagogical practices but their PCK is under-explored and indeed challenging to explore.

PCK 'embodies the aspects of content most germane to its teachability' (Shulman, 1986, p. 9). This knowledge of how to powerfully represent ideas, which analogies and examples are effective, what makes grasp of specific topics easy or difficult and so on translates into active knowing (see Kind, 2009), skills and practices. This is the 'craft knowledge', the practical wisdom that interacts with rather than sits in opposition to theoretical knowledge, the study of which cannot lead to prescriptions for teaching but 'should attempt to surpass the idiosyncratic level of individual narratives' (van Driel, Verloop, & de Vos, 1998, p. 674). Such knowledge is tacit, practical and situated (Traianou, 2006); it is often not visible through observing teaching, nor easily drawn to mind through interviewing teachers about their teaching in the abstract. The development of PCK involves complex interaction of dynamic forces which, Özmanter (2011) argues, teachers need to reflect on if they are to beneficially transform their pedagogical practices. Thus, we aimed to glean insights into PCK and pedagogical practices in teaching social research methods through a combination of observing and interviewing involving video stimulated recall and reflection.

Video stimulated recall is an established method for helping teachers to reflect on their practice (see Moyles, Adams, & Musgrove, 2002; Pirie, 1996; Powell, 2005). Debate about refining the method focuses on the timing of the stimulated recall; Lyle (2003) argues from experience that for accurate recall it is important to conduct the video-stimulated interview as soon after the event as possible, though tiredness can work against this. While one can never quite get to what teachers (and learners) were thinking at the time (as this is not always knowable to the people themselves), the goal of getting as close as possible requires overcoming challenges of scheduling. Using video rather than still images brings further technical challenges and Dodd (2014) notes the difficulties within practitioner research of leaving a camera to capture the activity of the busy classroom and facilitating adequate playback.

Video has been used with teachers to stimulate not just recall but also reflective dialogue. Moyles, Hargreaves, Merry, Paterson, and Estarte-Sarries (2003) used this approach extensively when researching interactive teaching in primary schools, whereby joint viewing of their work provided the participating teachers with 'an opportunity to reflect with a knowledgeable research partner on one's own teaching' (p. 4). Their joint reflection was replicated by Challen (2013), again with primary school teachers, and with the intention of valuing and triangulating different perspectives and data sources. The approach has the potential to inform practice as well as research (see e.g. Clarke, 1997; Powell, 2005). There are benefits for participating teachers reflecting on their own work, but also valuable and often missed (Alexander, 2000) potential insights to be contributed by learners, and alternative, perceptive and, as Krull, Oras, and Sisask (2007) found, critical insights that can be contributed by uninvolved teachers.

The use of video to stimulate recall, reflection and dialogue is very different from its use for primary analysis. In analysing the talk that is stimulated, the focus is more on the thinking behind the action (including the elusive PCK) and the

responses to it, than on the action itself. In turn, these are intertwined as knowledge in action for, as Shulman (1987) argues, pedagogical practices both reflect and stimulate thoughtfulness. Thus, in this research we followed the guidance of Alexander (2000, p. 269) to 'talk with whom we watch'. While recall is aided by immediate follow-up questioning based on the video (Morgan, 2007), reflection is aided by time spent with the video to consider it alongside reflective prompts. One way to do this is for participants to view the video in their own time, selecting episodes for discussion and gaining a sense of ownership as well as authentic dialogue (Challen, 2013). Careful preparation of pre-selected video clips can lead to more focused data generation but it may be necessary for episodes to be hastily selected by researchers from field notes or spontaneously sought in the moment of the discussion. One way of making up for lack of reflection time is using careful questioning and prompting (Challen, 2013; Moyles et al., 2003) but this may feel less comfortable as partnership research. Fenstermacher (1994, p. 4) discusses 'the difference between knowledge generated by university-based researchers and that generated by practicing teachers'; we were interested in knowledge generated by both of these, plus learners, in dialogue. We wanted teachers and learners involved in this research to be co-producers of knowledge, working with primary data and analytic units that they could connect with.

The research

Our emphasis in the close up component of the study was on facilitating a small number of video stimulated focus group discussions and exploring how to optimise the usefulness of these for fruitful data generation in relation to the three stated research questions, particularly the third about the nature of teachers' PCK and learners' insight into this. The starting point was the selection of teaching/training events and the sampling strategy for the participants. Selection was based on the need for the courses: to be short (1–4 days); to represent advanced or innovative social research methods training[1] (our overall remit); and to be taught by people with sufficient confidence in their practice and interest in the project to be comfortable with participation (as part of our ethics protocol) so as not to cause undue stress and to facilitate benefits from participation. An additional practical concern was that the course schedule needed to allow for a focus group to be added to the end of the day (thus excluding some potentially interesting yet longer one-day courses) as convening the group at a later date would be impractical. Together the courses needed to cover a variety of research methods (even if, as it transpired, they focused on their more technical aspects). Four short course events were chosen from the sampling frame of those advertised on the training database of the National Centre for Research Methods, one each on multi-modality (MM), computer-assisted qualitative data analysis software (CAQDAS), multi-level modelling (MLM) and systematic review (SR).

We engaged in extensive preparation with the technical challenges intertwined with the methodological and ethical decision-making. A core aim was for teachers and learners to enter into dialogue in reflecting back on a specific teaching/training event. Hence, we had rejected the option of separate focus groups for teachers and learners – a scenario in which the benefit of more candid comment would be outweighed by the sense that the learners, teachers and researchers were passing judgement on one another. The desire for them to come together in dialogue over the

pedagogical processes at work also guided the need for two camera angles, one focused on the teacher(s) and one on the learners. During video playback, the aim was to simultaneously show these different perspectives by combining the camera angles into a single video.

To achieve immediate playback a novel technical solution was required involving the use of a high-powered laptop to synchronously capture video from two separate cameras together with a boundary-style microphone suited to recording group discussion. Where footage from multiple cameras would normally need to be combined, along with audio recordings, during *post hoc* video editing, this approach allowed us to capture and combine the different camera angles and audio as a 'live' recording that could be available for immediate playback. Having trialled various equipment we selected two high definition wide-angled cameras with the facility to output (or 'stream') video in a format that could be captured by a laptop computer. These cameras also had the advantage of being very compact and lightweight, allowing them to be mounted inconspicuously in convenient areas of the teaching rooms (typically on suction-cup mounts) thus hopefully minimising stress on teachers and learners. One camera was angled towards the front of the room to capture the teacher(s); the other was angled towards the learners to provide a perspective similar to that of the teacher. The boundary microphone was positioned towards the middle of the room to capture audio from both the teacher and the learners. Software was used to combine the video and audio sources into a single recording, using either 'picture-in-picture' or 'split-screen' formats. For a more detailed discussion of the technical options explored for this project, see Kilburn (2014).

Access to each course was negotiated with the teacher/trainer first. Upon recruiting the teachers we contacted the enroled learners to explain the research, their right to opt out from being video recorded, and their option to participate in the focus group. No learners opted not to be video recorded and between around a quarter and three-quarters opted into the focus group. For each course we opted to observe one whole training day in real time (two of the courses were 1-day events, one 3-day and one 4-day) while making the video recording. This involved one researcher monitoring the video capture and adjusting the equipment as necessary, one making a detailed qualitative observational record, and one focused on recording the timing of procedural events and critical moments to aid their identification for playback (this being particularly important as a day's-worth of video footage was typically captured).

At the start of each event we reminded learners of the aims and procedures in the research. In terms of ethics, we wanted to create a research environment that did not induce undue stress. The information for participants emphasised that this was a collaborative and not judgemental exploratory probing of pedagogical practices. During the sessions we sat at the back or side, making ourselves unobtrusive without disguising the purpose of our presence. At breaks in the teaching the three of us conferred about key moments that might be useful for the focus group discussion – those that marked a critical point in the session or that illustrated what we felt was an interesting pedagogical event or strategy. At the end of the teaching and before the focus group began, we arranged an informal circle of seating, provided refreshments, gathered informed consent forms, provided £10 retail vouchers as a thank you for participation and answered any questions. This helped to establish a relaxed ambience.

The focus group discussions lasted for approximately fifty minutes and involved one to three teachers and between three and thirteen learners. The discussions were

audio recorded and transcribed. The topic guide was planned to include a warm-up question steered to the teachers about the challenges they perceived in teaching the particular material/skills, with prompts about what guided the approach and whether anything new was tried. The learners were then invited to discuss what was challenging to learn. The topic guide moved to presentation of video clips for discussion and then to inviting the teacher and then learners to identify particular parts of the session that they would like to review in the video and reflect on. Prompts were about the reasons for the selection, what was challenging at that time and how they felt. The planned ending was an open invitation to add topics for attention in the study. Focus group discussions differed in how free-flowing they were and in the amount of video incorporated and how it was used. Focus group transcripts were each thematically analysed by two researchers using (and adding to) themes agreed by the research team in response to the initial thematic analysis of the expert panel component. NVivo and freehand coding were used in a complementary fashion. Features of grounded theorising and constant comparison were used to identify and develop themes iteratively from the ongoing data-collection and analysis. Emergent themes were discussed among the research team leading to refinement of the coding scheme. The central themes emerging from the data broadly concerned the individual approaches taken by the learners and teachers, the way in which teaching was conducted and experienced, and the broader context in which these training sessions took place. The product of this process, which was shaped by the interests of both teachers and learners, was shared with the teachers when formulating this paper; approaching the learners again at this point was not feasible.

Reflection: the challenges, successes and findings

Challenges

In the event, the role played by the video in stimulating recall and reflection was smaller than anticipated. This was in part a matter of redundancy: as the focus groups immediately followed the courses participants seemed keen and competent to reflect on the session without the need for audio-visual stimuli. It was, therefore, sometimes judged – in the moment – to be fruitless rather than fruitful to interrupt the flow of dialogue to incorporate the video. Sometimes the learners made this judgement for themselves, such as in the focus group following training in SR when the learners were offered the opportunity to select video and instead opted to discuss active learning time in the training without recourse to the video for recall. Despite our real-time observation of the sessions, note-taking, discussion during breaks, and advanced technology, it also proved challenging to identify provocative video clips from the days' training in the brief preparation time available between the session and the focus group. It was harder still to triangulate the notes and time codes to identify precise episodes mentioned in dialogue. Typically, we therefore limited the use of the video to two or three clips, lasting no more than a couple of minutes. Given more time for reflection between training event and focus group it is likely that we would have made more use of the video.

The role of the video was also diminished by the sense in which the real life experience did not always adequately translate into the video format. There were many occasions when we were enthused about the pedagogical significance of something that had happened in the session, having independently recorded it as a

critical moment in our notes, but often when we showed a video clip of this to the group there was a muted response. Even we (sometimes somewhat embarrassingly after an enthusiastic build-up to the clip) could not see on video what we felt in real time observation. While the discussion that followed the playback on such occasions was illuminating, it was not animated. One reading of this is that the quality of the video and/or sound sometimes failed to adequately capture what was taking place during the training itself. This presented a considerable methodological hurdle as the quality of the recording/playback was affected by factors beyond our control. In some cases, low lighting or high levels of ambient noise impacted on the audio-visual quality of our recordings and in others the recording was of a high quality but the venue's playback equipment was not. We also felt that, by the time everyone viewed the video together they were tired and less liable to be moved (though the evidence for this is hard to establish). Being relatively uninterested in the moment-by-moment pedagogical unfolding of the session could explain the low impact of the video clips for the learners, possibly even the teachers, although this was not the impression that we gained from the respondents themselves. It may just be that the ephemeral is just that; video can record and translate experience but it cannot replace or recreate experience. This is not to say that the role of video is negated, rather that expectations of it need to be adjusted.

The video seemed to be more effective, not when it was a trigger to recall and reflection, but when it was a response to it. In the discussion following the CAQ-DAS training, video was used naturally as a contribution to the discussion, not chosen by the learner but triggered by her reference to the teacher co-teaching with a course participant and the researcher finding a video clip of this. This led into a new discussion about the diagram the teacher used and her reflection on the newness of this for her. The discussion emerged from genuine shared focus, making sense of something that was significant for all. This may have been helped by the group being very small (three learners) which added informality to the task, for example:

Melanie:	… are there other sort of moments that we can discuss that were significant in any way?
Dom (learner):	Yeah, I have a moment.
Melanie:	You have a moment; share it with us!
Dom:	I would like to make it the other way, what's your guess what was my moment! [laughter] Anyway, I'll tell you!

These particular learners were also people who supported others in learning research methods and so their level of interest in the pedagogic dimension was high. They were unusual as participants in identifying video clips and drawing out their importance as seen in this excerpt:

Melanie:	So that's a deliberate.
Nadia (teacher):	That's a deliberate thing, yeah.
Kim (learner):	That worked really well.
Melanie:	Learning by our mistakes.
Daniel:	I can't remember where that is.
Natalie (learner):	That's quite near the end, yeah.
Video:	[1m0s]
Natalie:	None of us are responding. You [Nadia] went for a long time before we responded. Did you notice? You talked for a long time about that before, and it was Dom who finally responded, the rest of us

	just sat there. And then we turned when Dom said it. You turned last I think Kim.
Kim:	Yeah, I think.
Natalie:	[to Nadia] You were feeling conscious about you wanted a reaction because you kept going and you moved around and you kind of sat down and you [.]
Nadia:	I think I was, and I don't know what I was thinking.
Melanie:	And was that the time when you said 'shall I say it again?', that was a good moment?
Kim:	Yeah, so that was when I didn't understand something, actually, 'shall I say it again?'

In contrast it is clear from the transcript of the focus group of advanced quantitative learners that sometimes the observed episode resonated with us as researchers only; we had the whole research picture and others did not. Hence, when we showed a video clip of the teacher drawing on her own experience and learning from her errors we could articulate why it mattered to us:

Melanie:	So other researchers, trainee researchers or whatever, early career researchers, have said to us that it matters that the people teaching them have real-life experience of using that model. Does that resonate with you [learners] or does it matter that Abigail's [teacher] used that?
Daniel:	And encountered, not a problem, but an area of confusion or uncertainty in these things, so actually you know, that their method wasn't perfect.

The learners went on to echo some of the things that our interviewed experts had discussed, for example:

> … when we are facing the same, similar kind of a problem we don't feel that we are alone or, so we feel a little bit more confident. So this kind of personal narratives or personal experiences sometimes are valuable as some kind of, give some kind of comfort that no, this is the first time my model has failed … (Bruno)

Aside from as a possible aid in recalling the moment in question, the video had little direct impact in triggering this response.

The impact of the video may have been lessened because the atmosphere and context were missing in the playback. An event was funny, or informative, or critical as it played out because of where it was in the day, how everyone was feeling, or the interpersonal dynamic at that time. These factors were not replicable in the video. We had carefully chosen our equipment, camera angles and episodes, but we were not film makers seeking or able to intensify the moment. When we use anecdote – in teaching, interviewing or reporting of research – we craft it so that it serves our purpose. With the video we had neither the skill nor time for this. This may be where, with greater time, we could combine anecdote and video with greater effect.

Successes

One occasion when the video did bring a significant moment alive was instigated by Daniel and related to the teacher offering two subtly different graphs. The primary pedagogical tool was use of visuals, but the discussion turned first to the unplanned shared humour in the moment, helping to re-create it.

Melanie:	Yes, do you want to put those pictures up? There was the bit about the optician! The 'Is that better or worse?' moment!
Daniel:	Well I suppose the point … we wondered about this, and whether it was by complement perhaps the different ways in which people learn this sort of material?
Video:	[0m50s]
Daniel:	So it felt like a key moment for us.
Melanie:	It was nice.
Anton (teacher):	It felt like one for me too.
Melanie:	It was nice, because it was the first moment of shared laughter in the group, so it was the first time, sitting at the back we went 'oh yeah they are all together sharing that moment'. Because it could be that you're in different worlds. Do you know what I mean? You can all be going through the same experience, but experiencing it very differently, but here you were all sharing that joke. But there aren't many kind of opportunities for laughs teaching this stuff are there, you know? [laughter]
Anton:	It's not that funny, no!
Melanie:	Is it me, or is it [the material] dry?!
Anton:	It's not that funny per se, and we do try, yeah. And I hadn't written that down in advance certainly.

The exposure of the positive role humour can play could perhaps enable this to become further developed as conscious pedagogical practice for this quantitative methods teacher.

Another example of powerful video use followed the training on SR in which the video seemed to be effective because of the strength of feeling of the learners:

Video:	[0m48s]
Daniel:	I think, well Melanie will probably say more about this than me, but I think we're interested in that in particular because it was one of the moments [when] you're quite engaged …
Melanie:	There was nodding then, for the tape … it wasn't very long ago [laughter] do you recall that moment?
Liz (learner):	Actually I disagreed very strongly with what was being said, but perhaps, I don't know if that came across that I did. Well I didn't say, I didn't say 'I strongly disagree'.

The learner moved on to explicate her ethical position and another learner defended the disciplinary perspective from her own position within it. The discussion, which was about how they were behaving in class related to their feelings and disciplinary backgrounds, was animated with much shared focus and laughter; Liz spoke of being glad to have had the chance to follow up the conversation in class and to explore the other learners' different positionality. This is turn led to the teachers seeking learner feedback on their strategy of not splitting the course down quantitative/qualitative or disciplinary lines. The role of the video itself in all this is unclear, but the facilitation of shared dialogue was crucial. In introducing the video Daniel stated our desire not to pre-empt too much, yet it was hard to resist flagging up what moved us. Nonetheless the video led to discussion about the things the learners said they would remember from the training.

With regard to process, the focus groups were successful in establishing a three-way dialogue and a feeling of the challenge of teaching and learning research methods being something we were all in together. Anton encouraged learners to select

video clips: 'I'd be interested if you guys could pick key moments'. Nadia commented to the learners, 'I've got to work out what all your needs are' and later 'I feel like I haven't got enough, I have never got enough time to say what I want to say and to cover … ' Learners joined in with the pedagogical contemplation: 'I think that was a hard session to teach …' (SR) and teachers seized on the opportunity for useable feedback, e.g. 'what are better ways of getting people more involved?' (Abigail, MLM). They communicated strongly the usefulness of discussing the pedagogy with the learners, with one teacher (SR) sharing his anxieties about lack of control over the student-centred parts of the course; he responded to learners' arguments about the value of these parts, 'You're right, it's about holding my nerve'. The shared aspect was aided by teachers sometimes connecting with the learners by referring to their own experiences of learning the method (MM), thus creating a sense of common experience.

While the collaborative, dialogic approach was appreciated, the strangeness of the situation was also noted, such as with jokes about dressing for the camera (Anton). In one focus group (following a day on MM) the teacher commented:

Anne:	Weird isn't it?
Melanie:	Pulling apart a session after it's just happened?
Anne:	[to learners] I feel weird; you must feel weird.

In another (following MLM training) Anton responded: 'What was going on in my head is a very difficult, odd question to ask me'. As researchers we were sometimes compensating for weaknesses in video clarity and responding to the newness of the situation by providing probably too much explanatory narrative. Despite this strangeness, participants entered openly into dialogue. Anne (somewhat atypically among the teachers) nominated a video clip of genuine interest to her, because as she said this part of her pedagogic practice was new and: 'so I'm genuinely welcoming all your thoughts on that'. Seeing it again helped her to reflect:

> Yeah, I think I just quite like the fact it felt quite conversational, I felt quite relaxed at that point when I suppose there was some comments that were feeding on from other members; it wasn't like I was always asking the questions. It felt like it was really interesting, lots of interesting questions.

Despite a similar level of reflection other participants rarely drew on the video as a resource.

More findings

With regard to findings, the video stimulated dialogue contributed data within the (mix of a priori and emergent) themes already identified in the expert panel component: the individual approaches taken by the learners and teachers, the way in which teaching was conducted and experienced, and the broader context in which these training sessions took place. The close up component added detail to some of the more generic statements. For example, the issue of pacing within teaching emerged from the individual interviews as a challenge, and Nadia talked specifically about her approach of looking at learners' computer screens to monitor learner pace and thus inform her pace. The data also reinforced issues that had arisen, such as the challenge of poorly prepared learners; teachers explained that in teaching the intricacies of SR or CAQDAS it is not their job to teach research or analysis, but that

essential knowledge of this kind sometimes needed to be imparted. The learners endorsed concern with the difficulty of advanced methods subject matter with comments like, 'it's the topic that's hard' and 'the terminology was hard' (CAQDAS). Interviewees in the first component had raised the question of starting points and in the close up component learners commented on appreciating preparatory material that allowed them to orient themselves ahead of the session (MM, MLM) or having the order of covering quantitative approaches ahead of qualitative approaches reversed (SR). Teachers commented on 'having to quickly ascertain where people are and quickly realise where I can start off at' (Nadia). The close up component also added nuanced layers to themes like diversity of expertise with Nadia reflecting on her concern to manage her potential vulnerability as a teacher when faced with a very experienced learner ('she's going to know more than I do') and learners, in turn, talking about how much they valued hearing from more or differently experienced peers (CAQDAS, SR).

We had invested in the video stimulated dialogue approach partly in the hope of teasing out PCK. In this we were rewarded by teachers making illuminative statements, such as:

> If I know I've got people in the room who have used another software, then that's a really good teaching mechanism for me, because when I'm saying something about one software and I compare it to how it works in the other software, that's often quite a good way of making something clear. (Nadia)

Moreover, their reflexivity was evident as they spoke of their pedagogical decision-making: 'there's an intention behind that' (Nadia) or 'that [combination of practical interwoven with input] was by design' (Sonya, SR). They referred to their learning through experience. For example Nadia noted her conscious strategy to address conceptual content before operational content, and that 'In the past, when I first started teaching, I was much more operational'; Simon (SR) even spoke of his decision, having tried a practical activity for teaching a specific aspect, never to do so again. In some cases the teachers were drawing on extensive explicit pedagogical thought, the SR teachers discussed how, in teaching teams, they came to handle the mix of quantitative, qualitative and mixed approaches to synthesis, including issues of sequencing and primacy. At other times the combination of video and question prompt was effective in drawing out what was otherwise invisible to them. Nadia's embodiment of her concepts, for example, was so visually powerful yet so unconsciously executed: 'I talk with my whole body don't I? I never realised that … I had no idea that I moved my hands'. Moreover this tacit device was applauded by learner Natalie who fed back 'that's a very attractive quality … it's a form of engagement … it's that energy you exude'. Implicit PCK was teased out, enabling the teacher to explain. For example, after showing a short video clip following the MLM course a dialogue ensued in which the teacher seemed to be articulating unrehearsed thinking while drawing the learners in and making a teaching point to them.

Melanie:	We noted lots of times when you were doing the refreshing, the recapping, 'remember, remember', which I guess [relates] to what you were saying about – you have to keep with it otherwise if they say something like that, and you haven't remembered – how did you know whether they were with you?
Anton:	It's a good question. You don't know … the tricky point I would say with those sorts of things is that you have to make an assumption,

> you sense that people are still with you to a certain degree, otherwise we then have to put another slide in or another 5-min extended explanation as to why we did the same thing. And I think the reason I asked the question there was less about ensuring they had an answer and more about reminding people to think about the ideas from the day before, and some of that is that you know you just have to go back and look at things again another time, and I always remember from when I learn different things, that you don't pick up everything the first time, you really don't. But by trying to remind you that there's something there to think about, it's putting in those triggers that actually you've got to, you know this bit relates back to something that I did yesterday, so I can go back and have a look at that some other time.

This was one of many occasions when we were prompted to re-think what we had seen. Looking at the video in isolation would suggest a teacher moving on at pace, whose questions are rhetorical, perhaps just habit. But this dialogue presents an alternative explanation and potentially important PCK. It was also an occasion when having the learner response to the pedagogy being made transparent added more layers of detail to the emergent and co-constructed picture.

Melanie:	Although we had the cameras, we couldn't tell what you were writing down or thinking … What was going on in your heads?
Stuart (learner):	… you start to tell that you've remembered the thing that we did yesterday. Yeah, it makes you pay more attention and try to remember to think, because for example for this like centralising thing was not one of the things that I clearly understood, so I came like yeah, this is the thing, that's why we had this before, so like yeah, it underlined in my mind that centralising thing because yeah, maybe I may need to pay more attention …
Anton:	Did it make you feel more anxious that I asked you about it then?
Stuart:	Yeah.
Anton:	So I mean was it [a] bad thing?
Stuart:	No, no, not anxious, but like more of – they're of importance.
Anton:	Right.
Stuart:	Just like that, particular like thing, because you will see that it is related to something else or something further, so like it makes you feel like maybe I have to look back for this particular stuff.

Our researcher understanding of the teachers' different uses of questioning in their teaching could be checked, although again the result was a co-constructed understanding.

Melanie:	And I think you two were using questions quite differently. You [Anton] were often using them to flag up 'this is an important thing', whereas you [Abigail] were using them to check knowledge I think some of the time and to sometimes pull people in?
Abigail:	Yeah, to see if they've understood what I've explained, yes … one thing that I find really difficult with this sort of course generally is to get feedback from the course participants and see if they're still with you or not, and also I quite like to incorporate them, but it's quite difficult …

Prompted by a fresh video clip, the focus group reflected together on what was going on with the questioning in Abigail's approach. The videos stimulated the

learners to make visible aspects of their practice, just as it did for the teachers' pedagogy. An excerpt of video clip shown in fast time without sound prompted recall as much as reflection, but also invited the learners back into a space they were occupying earlier in the day. Learner Joe reflected:

> I found myself personally trying to get through them [online exercises] as quick as I could, because I might have been a bit slower compared to other people, so I was conscious of having the hour to get it done. So, but then obviously I need to go back myself and revisit and take my time going through the material myself to get a good grasp of it, but yeah, no, they were very useful, those workshops I thought.

Equally importantly, the learners' involvement and willingness to be candid allowed for additional insight into their approaches to the training provided including identifying 'some areas where I feel almost too ignorant to ask can I have help' (Tara, SR).

Conclusion: A method fit for purpose?

The video stimulated focus group approach used in the close up component of this study demanded considerable resource including researcher time. This was warranted in that it provided a record of the key events and enabled various interpretations of them. While the ephemeral qualities of these moments were not always adequately captured by the video, the clips nevertheless offered useful stimulus material in the way Morgan, Fellows, and Guevara (2008) describe in helping the focus groups in navigating between these points in time. While in the MLM training the learners had seemed rather passive and expression-less, making it difficult to detect their engagement, in the focus group they asserted their full concentration. New perspectives emerged quite literally, as in the focus group following the CAQ-DAS training one of the learners referred to another as a disembodied voice as she had not seen his face from behind his computer screen. This was not see-able by us as researchers at the back, or by the teacher seated at the front, and so without the focus group dialogue would have been left unknown to us. This echoes Challen's (2013, p. 76) experience of the 'crucial role' played by video stimulated reflective dialogue in alerting her to 'discrepancies' between what she thought she had observed and the participants' explanations. More broadly, it illustrates the value of reflective dialogue involving teachers and learners as one means of enhancing the role of practitioner reflection as a basis for pedagogical insights into the teaching of research methods. Our common experience is that in place of individual, potentially flawed interpretations, this approach was able to produce imperfect but shared and more nuanced interpretations. We cannot know what we might have achieved in terms of reflective dialogue without the inclusion of video. The indications are that video is not always necessary but that it provides a shared focus, sometimes as a stimulus and sometimes as a reference point during the interaction.

Shulman (1987, p. 6) observed that 'teachers themselves have difficulty articulating what they know and how they know it'. Our approach enabled subtle aspects of the teachers' pedagogical decision-making that was invisible to us as researchers, probably unnoticed by learners and intangible to the teachers, become knowable. Using our methodological approach, even with the technical challenges and limitations discussed here, some of the tacit practical knowledge that Traianou (2006) argues is applied by teachers *in situ* became accessible to us as a small learning

community of teachers, learners and researchers. We were responding to an opportunity to read the pedagogical environment critically (Segall, 2004).This does not create pedagogical knowledge in a form that is immediately useable by others. Nonetheless, in the methods capacity-building arena where there is limited work generating data about pedagogical thought in action the approach is valuable. We make no claim to video stimulated reflection and dialogue being the best way to generate evidence and ensure its use to inform the teaching of research methods. We do, however, maintain that there is more to gain from its application.

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Note

1. Advanced training here is taken to mean at postgraduate level and beyond aimed at those who have already embarked on a research career, applying rather than merely knowing about methods, and even developing them.

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