

# The value of video stimulated recall in reflective teaching practices.

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*The value of video stimulated recall as a tool to assist the development of reflective skills of teachers is well documented. Video stimulated recall is the least intrusive and yet the most inclusive way of studying classroom phenomena. It allows the teacher to 're-live' an episode of teaching by providing, in retrospect, an accurate verbalised account of his/her thought processes. Videotapes allows the teacher to examine their mental models in situ, study changes to their schemas during and after teaching episodes, and formulate new teaching models as a result. Furthermore, videotapes give the teacher more time to reflect on classroom events and look for answers. In short, video stimulated recall allows teachers to reflect and revisit recorded scenes at anytime; the videotapes can be examined to gather further specific evidence when necessary; it allows the teachers to decide for themselves what they want to focus on; and, others - critical friends - can watch episodes and make suggestions. Importantly, teachers can be the ones who are in control of stopping the tape at any time when they see themselves making a decision, describe what they were doing at that time, what alternatives they had considered and what they decided. In this way video stimulated recall allows for the elicitation of 'knowledge -in-action' or interactive cognitions. However, researchers report that teachers viewing a videotape of their lessons may find the experience highly stressful and may negate teachers' preparedness to report on what they have recalled. Other research indicates that teachers watching videotapes of their lessons may initially be distracted by their own physical appearance. Teachers' interactive cognitions are not always retrievable and therefore may be difficult, if not impossible to recall retrospectively. In this paper the strengths and limitations of this method for professional development are discussed. The experiences of two beginning teachers and two experienced teachers will be shared.*

## Introduction

The potential of video stimulated recall (VSR) in educational research is discussed as a way of providing professional developments for participants. The paper uses the research of Clarke and Hollingworth (1994; 2002) to argue that effective professional development should be based on a coherent theory of learning that takes into account the "social situatedness" of teachers' work (Clarke & Hollingworth, 2002: 955). Strategies used in this type of professional development are therefore incorporated into the teacher's own professional world of practice, which involves changing both teacher knowledge and teacher practice in what Clarke and Hollingworth (2002) call an "interconnected model" of professional growth (p.951).

Video stimulated recall was used in a longitudinal study dating 2002 and 2003, of ten beginning social science teachers as they moved from their final year of teacher preparation to their first year of teaching (Reitano, 2004). Reitano and Sim (2005) proposed that the research technique used in the

longitudinal study can be a powerful tool enabling teachers to examine, reflect and suggest changes to their professional knowledge that would take into account the significance of the “social situatedness” of their practice. The technique was also used by Reitano and Porter (2006), to elicit the knowledge in action of six experienced teachers of Social Science. This paper examines the strengths and limitations of these research tools. The experiences of two beginning teachers and two experienced teachers will be shared. In doing so, the possible threats to teachers’ professional growth that may be associated with their use will be considered.

## **Video stimulated recall**

Video stimulated recall is used being more and more in educational research and professional development of teachers (Meijer, Beijaard & Verloop, 2002). This section of the paper reviews several classroom based studies on the strengths associated with this technique as an instrument for capturing teachers’ interactive cognitions. The accompanying examples of case studies clearly indicate the value of this tool for professional development.

### *Strengths*

Video stimulated recall is an effective technique for identifying and examining teachers’ thoughts and decisions, and the reasons for acting as they do. During the teaching process in the classroom the teachers’ goals may remain constant or may vary, and their purposes and intentions towards the lesson may change depending on how they interact with their students, and how students respond to teachers (Calderhead, 1981). No matter how sophisticated an observer’s checklist, the evidence presented to the teacher by the observer will not contain evidence of how that teacher made decisions, thought about what he/she was doing in the classroom, and the nature of the complex environment in which he/she must perform (Wojcik, 1993). There is little evidence to show that interactional analysis of interview between observer and participant is an effective tool in disclosing the interactive decision making of teachers-in-action (Meade & McMeniman, 1991). In this sense, the use of interview data cannot adequately recreate the teaching context and can be unreliable in terms of eliciting a teacher’s reasoning. While a think aloud protocol, which involves an explication of metacognitive thoughts would be, on most occasions, an appropriate method to use when studying an individual’s interactive thoughts, this is not possible at the same time as teachers are engaging in the complex and entangled environment of the classroom (Meijer, Beijaard & Verloop, 2002).

Pirie (1996) argues that video stimulated recall is the least intrusive and yet the most inclusive way of studying classroom phenomena. It allows the teacher to 'relive' an episode of teaching by providing, in retrospect, an accurate verbalised account of his/her thought processes (Calderhead, 1981). Teachers can gain an insight into their interactive cognitions which Meijer et al. (2002) summarize as concerning:

- split-second thoughts;
- tied to the specific context (i.e. the lesson);
- closely connected to teachers' knowledge and beliefs on the one hand, and,
- closely connected to the teachers' classroom practice on the other;
- integrative in nature (p.171).

Videotapes allows the teacher to examine their mental models in situ, study changes to their schemas during and after teaching episodes, and formulate new teaching models as a result (Henderson & Tallman, 1998). Furthermore, videotapes give the teacher more time to reflect on classroom events and look for answers (Pirie, 1996). In short, video stimulated recall allows teachers to reflect and revisit recorded scenes at anytime; the videotapes can be examined to gather further specific evidence when necessary; it allows the teachers to decide for themselves what they want to focus on; and, others - critical friends - can watch episodes and make suggestions (Pirie, 1996). Importantly, teachers can be the ones who are in control of stopping the tape at any time when they see themselves making a decision, describe what they were doing at that time, what alternatives they had considered and what they decided (Beyerbach, 1989; Marland, 1984).

In their study of high school science and maths teachers, Meade and McMeniman (1991) noted that video stimulated recall minimised superficial self-presentations when teachers were confronted by their actions in the classroom. The data gathered from the study also allowed the authors to gain insights into the pedagogical beliefs of teachers-in-action. Ethell (1997) showed in her study that beginning teachers' final understandings of an expert's thinking differed from their initial interpretations after they had "merely observed" the expert's practice. The preservice teachers were able to access the reflections of an expert teacher via video stimulated recall, and through collaborative reflection, gain a better understanding of the procedural nature of teaching - of self and of others. Student teachers accessing the thoughts of expert teachers were also the subject of another study (Meijer, Zanting & Verloop 2002) in which the former elicited and explored the latter's practical knowledge, using video stimulated recall. These studies demonstrate that the understandings gained from expert/beginning teacher partnerships can help the new teachers develop their own teaching in a more explicit way.

In this paper, the author uses evidence from two research projects that employed the video stimulated recall technique to access the knowledge bases of beginning and experienced social science teachers. The study with beginning Social Science teachers involved a 12 month longitudinal study that spanned their 6 months of teacher preparation study and the first 6 months as practicing teachers (Reitano, 2004). The second study used video stimulated recall to access the knowledge of experienced teachers regarding their understandings of controversial issues in Social Science teaching. As a result, four studies emerged that give detail to the argument that video stimulated recall enables teachers to make explicit their implicit understandings of their interactional cognitions and contributes to their professional growth. In this section of the paper, extracts from the case studies of Johannes and Lara, (Reitano, 2004) indicate the power of video stimulated recall to elicit their critical reflective practices regarding their understandings of effective Social Science teaching.

#### *Case study of Johannes*

During the research, Johannes identified a range of knowledge bases, especially pedagogical content knowledge. Johannes responded to what he saw in his teaching the following ways:

*Here, I decide to use a diagram... because its...well, from a ... learning style...umm...the theoretical perspective I'm sort of trying to appeal to the visual...learner in students ...the diagram to go along with this definition might help ... explain the concept...(VSR 1, p.314).*

*...someone mentioned they have a smell ( ) I think we crushed some leaves...umm... I as trying to draw upon their common knowledge they might relate to, by mentioning camphor chests, so...a bit of a constructivist idea...(VSR 1, p.315).*

Johannes used his classroom communication skills to use humour and at the same time, raise issues from the class fieldtrip:

*... the birds mating, and the male birds not being able to attract a female because trains...noisy trains overpowering their call...And...where there is an opportunity, I think there should be humour injected ...to lighten up and make...umm...the learning environment a more enjoyable place. It shouldn't be all sorts of rules and...umm...posterity sort of thing... (VSR 1, p.316).*

In the final data gathering episode, after six months of full time teaching, Johannes stresses the importance of linking of new knowledge to prior knowledge and

*...having those prior conceptions...challenged just enough...to cause conflict...but not so much that ...that its totally foreign or disjointed...from our prior knowledge ...needs to be that ...being pushed out of comfort zone...and the best way to do that ...is to relate these concepts...to their experiences...(VSR 2, p.337).*

He also used real world experiences to reinforce the knowledge learnt in class. For example,

*...If you always remind them of something everyday... in their experience... they are more likely to remember the abstract concepts... (VSR 2, p.336).*

Johannes displays a greater awareness of his students this time around. He commented on one student who

*... who will tend to sit back on his laurels... and not hand in a lot... He would probably be classed as gifted... He's got some really good results with little work... and I think he is a student though... that when you give him attention... and you keep pushing him... he can actually produce some really excellent work... He does struggle with his manual skills... his hand writing is fairly poor... So part of that ... he is probably reticent to do a lot of writing... because he hasn't found that very rewarding... and he finds that its messy ... and it doesn't measure up to his usual performance ... (VSR 2, p.338)*

There seemed to be no conflict in his ability to respond to the video stimulated recall interviews for social science or science. His understanding of the importance pedagogical content knowledge in teaching was consistently strong in both. However, his comments on the learner, was more apparent at the second video stimulated recall interview.

#### *Case study of Lara*

The first part of the case study shows Lara as a beginning social science teacher but during her independent teaching practice she taught English. Students in Lara's class were given a combination of direct instructional teaching strategies and independent work tasks. The two types of teaching strategies were reflected in her following statements:

*I... tend to work the classroom, as I call it... as opposed to standing out the front and preaching... just to check that (a) they are on task and (b)... looking at their written work and picking up on any spelling mistakes, or that sort of thing. So, I really like to walk around ... umm... move in between desks and check everyone's work ... and just to make sure that they know that I'm not just to stay out in front and talk to them. I am going to move around ... and be on their toes (VSR 1, p.355-356)*

Lara then resorted to a more didactic approach by deciding to

*conclude my lesson by talking about the exam... and that is for tomorrow ... only because I was just going to briefly mention it, but we needed to go on a little bit more in depth than I thought we would ... because there were a few questions ... and they seem to be on the top of everyone's heads ... was the exam... (VSR 1, p.356).*

Not surprisingly, Lara's knowledge of learners and how they learn was more apparent after six months of teaching practice than twelve months previously. She spoke of some students who

*... usually seat together... and they are inseparable... in class and out ... and one of the activities called for... creating a timeline... and instead of using their computers... they decided they were going to use a sheet... and organise it in chronological order... and surprisingly this was not an aspect I thought of... but they had their own resources... which was surprising for Year 12 boys in carrying*

*around scissors...and glue...and they did this...and it was effective ...for them in their learning styles... (VSR 2, p.376).*

Her capacity to explain, to illustrate and to use analogies was also more apparent than in her first video stimulated recall interview. For example, Lara used

*...the analogy of their time... when you go to the concert ... "Where are the most expensive seats?" ...and they said "Up the front..."and I said... "Where are the cheap seats?"...so to speak...and they all, said ... "Up the back" and I said "Well...the same would happen in the Globe"...the more your social standing...the more wealth you had in the community ...you would sit at the top... because they were the best seats...and those who were the peasants...or the lower classes who could not afford ...such seats...would be standing in the pits ... so to speak...So...I just kind of used that analogy to say...the best seats were at the top...and the poor seats were at the bottom...and it is the same today... (VSR 2, p.377)*

It would seem that Lara's second video stimulated recall interview resulted in a more confident explication of her interactive cognitions, as well as showing greater insight into the cognitive and affective abilities of her learners.

The following case studies of are two veteran teachers who have over 30 years each of teaching in the classroom.

#### *Case study of Nelson*

The topic of human rights was the focus of Nelson's lesson to his Year 11 Legal Studies students. He began the lesson by using various stimulus materials to help students brainstorm. Nelson said that it was important to

*...have a look at what sorts of things encompass; what's the breadth of field, if you wish, of human rights. So I bring up the charts and I would do this with a bigger class as well, so that they have some idea of the types of things that encompass this term 'human rights', and I have this thing from Amnesty International and I was able to put them in front of each and they were able to read off some of the articles – not many but some of them. Just to give an idea of the breadth, um, of what is a human right; and so they were able to read, OK, they were able to read easily, that's what that was.*

Stimulus material, such as photographs, charts, and posters are an integral part of Nelson's teaching strategies. He said that the use of pictorial stimuli was easy for such subject like Geography but just as important in Legal Studies too, because

*...through photography...you can show them what things look like and what concepts look like; you've gotta do it 'cause if you don't – If they don't know what it looks like they won't be able to explain it.*

Nelson is not afraid to use his own life experiences in tandem with the stimulus material to generate that extra response from students. He said that

*... as soon as you start saying: 'I remember once, or I heard this happen...' they lift their heads and they'll always listen to you because this happened to you and it works, it works. Once you start talking about your own experience and something that you found out; like from this map, the story of the Argentinian women [...]*

*I mean as soon as you can tell stories like that it humanises the whole thing, and I think that's really important; that you're going to get to kids that you're a human being and you had this experience or you've heard of this experience of other people. I think it's really important. It makes you human as well.*

Much of the stimulus material and discussion at the early the early stages of the lesson centred around overseas countries but now Nelson wanted to draw students back to the Australian situation. As he explains

*OK, so they have to jot down few things, they're important, but then we focus on the 'but' question, and whenever you want to put – do that – or look at the other side of the story, you should always use that word, um, and write from the board; 'but' there are problems. May be not as big a problems as in Argentine or China or wherever else, but we do have problems and that's, as I say, where the controversy comes in, yeah. And we start focusing then on the mandatory detention thing in particular...*

Nelson also wanted to draw students' attention to other points of view of the argument and to have students engage in a class discussion. So

*...I geared it up here. I tried to get provocative, not too provocative but I wanted to start an argument, 'cause it was the time to start the argument; time to start the controversial issue thing. Um, and so I asked provocative questions or got a provocative tone in my voice: 'Did you notice ...?' Basically I'm playing devil's advocate here. I'm starting to attack a little bit. I can do it because I know the kids. They're not going to be offended with me getting cross – not cross but getting agitated... yeah there was a deliberate provocation and I started to get more aggressive as it were.*

#### Case study of Linda

Linda taught a Year 5 class of students at a public school. She used a storybook about homelessness among young people as the theme for her lesson – a teaching strategy that she commonly uses with her students because students like stories, and because it is an effective way to integrate literacy teaching with the social sciences. Linda commenced her story by having students examine the illustrations because

*... this is pretty grim; the pictures are grim; ... the drawings; the boy was always on the outside looking in and all the inside things were yellow and bright and glowing whereas he was out in the dark, the black and the you know, the not very attractive so there's quite a lot of um, persuasion going on there. Then once they'd got, you know when we'd gone through that then there was the: 'Well OK, his home ...' you know, previously: 'Well OK he was home but now this much of a home. What sort of – why is he living like this? What would – would you like to be living like this? And what would cause a person to leave home?' So then to get them thinking something: It's not just a story there's some – there's a message going on here and we need to sort of go a little bit deeper and to see what would make a boy of that age who's still fairly connected to family and um would enjoy*

*being looked after by parents and provided for, why would he just decide to leave?*

Yet Linda expresses some exasperation about students' lack of reaction to the story and their inability to contribute to the class discussion. She said that

*... it's hard, you know, some of them, they're sitting there and you think: 'Come on you know the answer to this,' but they're happy to let others to [...] and just nod their head [...] I try to go around the room and ask a range then sometimes the little ones put their hands up and the big smiles on their faces are hard to resist and you think: 'I've asked you about 3 questions here I really need to ask somebody else.'*

Linda said one justification for telling this story about homelessness to her students was to inform them of the help available outside their immediate family, and that one has to be philosophical - life is full of frustrations. However, when Linda suggested the police as a source of support, students reacted negatively. She added that

*some children probably see schools and teachers a bit like that too, as being very – you know, a little authoritarian, although you always say that if you have any problems come and tell me and we'll deal it and sort it out. We'd like to think, but I mean who knows what's going on in the head of a small child when they're in this, you know [...] situation with parents, these are the two people who are supposed to be their greatest carers in the whole wide world. They can't trust them so how could they trust a policeman or a teacher? We just need to reinforce those things – look you have friends, you have relatives that surely you can turn to. That idea that seek help rather than run away um – sometimes everybody's cranky – we're all cranky sometimes that doesn't mean they dislike you or that mum and dad are going to um, be cranky all the time if there's some issue going on it will probably be resolved. Nine out of ten times it will be resolved.*

### *Discussion*

The evidence presented by these case studies responses, indicate that video stimulated recall is a valuable tool in accessing the thoughts of teachers. Video stimulated recall has been shown to be useful for teachers to find out the 'how' and 'why' of teaching by reliving teaching episodes – their knowledge in action – and thereby making explicit their knowledge of theory and practice. Video stimulated recall reduces superficial self presentations when teachers are confronted by their own actions; it has been used by beginning teachers to access the thoughts of expert teachers; and, it has been used to trace the knowledge growth of beginning social science teachers.

The effectiveness of video stimulated recall procedures will first of all depend upon the unobtrusive nature of videotaping of the classroom lesson. This can be difficult if students are not 'prepared' by the teacher for the intrusion of cameras, tripods, extension cords, and the extra person in the classroom. On the other hand, too much preparation by the teacher can have the opposite effect – students will be so conscious of not 'disturbing' the proceedings that the usual classroom dynamics will be absent.



Watching oneself teach can be, as the literature has suggested, a period of stress, but as Calderhead (1981) suggests, the rapport and trust built up between research and participants, especially in action research teams, should minimise these influences and hence result in fuller commentaries. However, a full and rich commentary will depend upon the participant's verbal fluency (Beyerbach, 1989); participants who lack verbal fluency may have difficulty articulating the decisions they make as the videotaping of their lesson unfolds. There will never be total access to the 'black box', but if the interview is conducted as soon as possible after videotaping, interruption to the teacher's cognitive processes will be reduced (Copeland, 1993). Although one may not get the whole picture, what is revealed is still valuable.

### *Limitations*

The limitations of video stimulated recall are both affective and cognitive. At the extreme level, researchers report that teachers viewing a videotape of their lessons may find the experience highly stressful (Fuller & Manning, 1973) and may negate teachers' preparedness to report on what they have recalled (Pirie, 1996). Other research indicates that teachers watching videotapes of their lessons may initially be distracted by their own physical appearance. Pirie (1996) allowed for "giggle-time" or "pre-viewing" for her students in order to deal with their embarrassment before being asked to comment on portions of the videotape.

Teachers' interactive cognitions are not always retrievable and therefore may be difficult, if not impossible to recall retrospectively. Meijer et al. (2002) cite the research of Anderson (1987) and Berliner (1992) who state that experienced teachers tend to "compile" their thinking, resulting in routine sets of behaviours which may prevent them from making explicit their interactive cognitions and therefore, making their verbal responses of their interactive thinking incomplete. Furthermore, teachers who view their videotapes from an already formed mindset just described will not be able to view the classroom objectively (Pirie, 1996).

Calderhead (1981) refers to the "tacit knowledge" that has been built up through experience and is not readily available for spontaneous verbalization. In fact, some areas of a person's knowledge have never been verbalised and therefore, may not be elicited in a verbal form in a video stimulated recall interview. Calderhead identifies experienced teachers especially as reaching a state of "automatization" whereby certain low level behaviours have become an automatic part of teachers' daily lives may not be explicated, because they are not aware of them.

Even though video stimulated recall appears to have a number of shortcomings, its potential strengths strength as a professional development tool is clear: teachers are able to relive their classroom experience, to critically reflect, and hence make explicit their implicit understandings of their teaching practice.

## **Conclusion**

More than a century ago, Dewey suggested the need for an intervention program in the learning to teach processes that would facilitate the development of student teachers' knowledge in action. Dewey said that preservice teachers should be involved actively in the reflective inquiry process in order to understand what takes place when learning occurs (Dewey, 1904/1974). Reflection involves what Rodgers (2002) refers to as a "...meaning-making process that moves a learner from one experience into the next with deeper understanding..." (p.845) of the relationships and connections with other experiences. Reflection is a disciplined way of thinking that needs to happen in interaction with others, and it requires an attitude that values "...the personal and intellectual growth of oneself and of others" (Rodgers, 2002:845). It involves "reviewing, reconstructing, re-enacting and critically analysing one's own and the class's performance, and grounding explanation in evidence" (Shulman, 1987:15). In the main, video stimulated recall has been shown to be a most effective tool for teachers to reflect on their knowledge in action and to promote professional growth.

## REFERENCES

- Anderson, J.R. (1987). Skill acquisition: compilation of weak-method problem solutions. *Psychological Review*, 94 (2), 192-210.
- Berliner, D.C. (1992). The nature of expertise in teaching, in F.K. Oser, A. Dick and J. Patry (eds) *Effective and Responsible Teaching: The New Synthesis*, San Francisco: Jossey-Bass.
- Beyerbach, B. (1989). *Exploring preservice and practice teachers' thinking about children teaching*. Paper presented at the Annual Meeting of the American Educational Research (San Francisco, CA). ERIC Reproduction Service No. 306 213.
- Calderhead, J. (1981). Stimulated recall: A method for research on teaching. *British Journal of Educational Psychology*, 51, 211-217.
- Clarke, D. & Hollingsworth, H.(2002). Elaborating a model of teacher professional growth. *Teaching and Teacher Education*, 18, pp 947- 967.
- Copeland, W.D. (1993). *Video cases and thinking of preservice teachers*. Paper presented at the Annual Meeting of the American Educational Research Association (Atlanta, GA, April 12-16, 1993). ERIC Reproduction Service No. 360298.
- Dewey, J. (1904/1974). The relation of theory to practice. In R. Archambault (Ed.), *John Dewey on education: selected writings*. Chicago: Chicago University Press.
- Fuller, F.F. & Manning, B.A. (1973). Self –confrontation reviewed: A conceptualization for video playback in teacher education. *Review of Educational Research*, 43, pp.469-528.
- Marland, P. (1984). *Stimulated recall from video: Its use in research on the thought processes of classroom participants*. In O. Zuber-Skerrit Video in Higher Education, London: Kogan Page, pp.156-164.
- Meade, P. & McMeniman, M. (1992). Stimulated recall: An effective methodology for examining successful teaching in science. *Australian Educational Researcher*, 19(3), 1-18.
- Meijer, P.C., Beijaard, D. & Verloop, N. (2002). Examining teachers' interactive cognitions using insights from research on teachers' practical knowledge. In Sugrue, C. & Day, C. (Eds.), *Developing Teachers and Teaching Practice*. London and New York: Routledge/Falmer.
- Meijer, P.C., Zanting, A. & Verloop, N. (2002). How can student teachers elicit experienced teachers' practical knowledge? Tools, suggestions, and significance. *Journal of Teacher Education*, 53 (5), 406-419.
- Pirie, S. (1996). *Classroom video-recording: When, why and how does it offer a valuable data source for qualitative research?* Paper resented at the Annual Meeting of the North American Chapter of the International Group for Psychology of Mathematics Education (Panama City, Florida). ERIC Reproduction Service No. 401 128.
- Reitano, P. (2004). From preservice to inservice teaching: A study of conceptual change and knowledge in action Unpublished doctoral thesis, Griffith University.
- Reitano, P. & Sim, C. (2005). *Providing a space for professional growth through research*. Paper presented at the Australian Teacher Education Association Conference. Charles Sturt University, Bathurst, New South Wales, Australia.
- Reitano P. & Porter, K. (in press). *Teaching controversial issues in schools: A study of six teachers of Social Science*.

Rodgers, C. (2002). Defining reflection: Another look at John Dewey and reflective thinking. *Teachers College Record*, 1-25.

Wojcik, P.R. (1993). A Self-study of reflective teaching. ERIC Reproduction Service No. 383 670.

Zanting, A., Verloop, N. & Vermunt, J.D. (2001). Student teachers eliciting mentors practical knowledge and comparing it to their own beliefs. *Teaching and Teacher Education*, 17, 725-740.