INTERNATIONAL INSTITUTE FOR QUALITATIVE METHODOLOGY (IIQM)
UNIVERSITY OF ALBERTA

Article

Video Use in Social Science Research and Program Evaluation

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Abstract

In light of technological advances in producing, viewing and storing moving images, it is appropriate to survey the literature concerning the use of moving images in research over the past few decades. A review of the literature shows that the use of video technology for research falls into three areas: observation (including data collection and analysis), a mechanism for giving feedback, and a means for distance learning and consulting via videoconferencing. This article addresses the first two areas — observation and feedback. It begins with a survey of the use of video observation as a tool for research and documentation. A section on feedback, divided into three sections: performance, interaction and situational assessment follows. A separate section is devoted to the use of video for Program Evaluation. The article concludes with a discussion of epistemological methodological issues and the ethics involved in such a technologically advanced medium.

Keywords: technology, observational methods, documentation, feedback, ethics

Researchers and practitioners have used photographs and film in varying degrees over the years. According to Prosser (1998), "taken cumulatively, images are signifiers of a culture; taken individually they are artefacts that provide us with very particular information about our existence" (1) It would seem likely therefore, that social science researchers would explore this rich resource. However, such is not the case, and Prosser encourages those qualitative researchers already using image-based research to continue, and those not using it to investigate its broad potential.

In a similar spirit, the present article surveys the use of moving images, either film or video, over recent decades. In the past, heavy equipment, variable environmental conditions (lighting, electricity, etc) and prohibitive costs have hampered such use. Advances in technology have all but eliminated these problems, and in the light of such advances in producing, viewing, and storing moving images, it is appropriate to survey the literature concerning the use of moving images in social science research.

A synthesis of such a review shows that the use of video technology for research falls into three areas: as a tool used for observation (data collection and analysis), as a mechanism for giving feedback, and as a means of distance learning and consulting via videoconferencing. Video observation has provided researchers with permanent revisable documentation from the field. This documentation can serve both as

a source of data collection to be used in research or evaluation or as a historical record. As a means of providing feedback, it has been used for training purposes in education and in the more clinical disciplines such as medicine, psychotherapy and social work. Computer based video technology has expanded the field of distance learning to include remote areas. Videoconferencing is the latest use of video technology and serves a variety of purposes not directly involved in data collection, analysis, or feedback, but rather as a facilitator in communications that further research pursues.

In this article, I begin by discussing video observation as a tool for research and as a tool for documentation. I will follow with a presentation of video use for feedback. The section on feedback is divided into three sections: performance, interaction, and situational assessment. The article concludes with a discussion of the epistemological and ethhical issues raised by using video. For reasons of space, this article does not deal with the burgeoning field of distance learning (Martin, 1994, Riedling, 1999).or the growing use of videoconferencing (Dudt and Garrett, 1997; Fetterman, 1996).

Video as Tool for Observation and Analysis

For Research

Film for social science research was first used in the field of anthropology, where moving pictures provided pioneers in the field such as Bateson and Mead (1942) with valuable documentation for research purposes. Following in this tradition, Collier and Collier (1986) wrote a practical guide for using photography as a research method in general. Their case for using photography and video for research is indeed convincing: visual images capture the context as well as the action of an event; they can be interpreted by multiple viewers; and the eye of the camera often freezes moments the human eye ignores. The Colliers (1967, 1986) base many of their convictions about the efficacy of motion pictures (film or video) on those studies where human behavior expresses communication and emotion principally through nonverbal cues and actions. Collier specifically points out that moving records make it easier to define the nature and significance of social behavior with responsible detail because "the language of motion defines love and hate, anger and delight, and other qualities of behavior" (Collier, 1967, p. 129).

In addition to the context, the focus of the observation is usually some form of social interaction. When observing social interaction, both verbal and nonverbal cues are observed. Nonverbal cues are particularly important in human interaction as discussed, examined and classified by Bales (1970), Barker (1968), Hall (1959, 1969), Harris (1964), and Mehrabian (1972). Nonverbal language has been defined as "including all behaviors that are involved in the transmission of experience or information from one person to another (or others)" (Siegman and Feldstein, 1987, p. 4). Good observations should include nonverbal language, such as movement or body language, that indicates a person's state of mind during an interaction. Such movements include self-grooming, clothing adjustment, repetitive manipulation of rings or other personal accoutrements, as well as movements involved in regulatory aspects of interactions (getting up, moving towards the door, etc) and gestures. "Gesture" is the classification given to those movements that convey a specific meaning to a specific language group (raising the thumb to signal a ride, pointing a finger to the head to indicate someone is crazy, and so on).

Stressing nonverbal communication, Erickson (1979), says that the method of observation should enable the observer to observe ethnographically, to include the process whereby people inform each other verbally and non-verbally about what is going on, what the "rules" are, and what the context is. In comparing observation by participant observers to observation by videotape (referred to as microanalysis of audiovisual records of human interaction) Erickson further states that "in both approaches, the researcher is attempting to understand events whose structure is too complex to be comprehended all at once, given the limits on human information processing" (1992, p. 208). Combining ethnography and

educational research, he suggests the close study of interaction through ethnographically oriented analysis of audiovisual records as a "potentially useful component of an ethnographic study of education" (Erickson, 1992, p. 202). He views videotape microanalysis as one of several tools in the education researcher's repertoire.

This repertoire contains both quantitative and qualitative methodology. The video can be used to collect quantitative data by providing documents from which researchers can categorize information (see, for example, Hare, Kritzer and Blumberg, 1979, and Leinhardt,1986). Similarly Gulek (1999) used the Multi-Trait Multi-Method approach to examine the educational ecology of classrooms. He found that "videos demonstrated strong evidence of convergent and discriminant (sic) validity in assessing mode of instruction and variety of learning materials used in the classrooms" (Abstract).

Erickson applied a procedure to education that had already been in use in sociolinguistics, where film has played an important role in isolating nonverbal behavior (Hall 1959; Peery and Crane, 1980), and spatial relationships between people - proxemics, (Hall, 1969; Peery and Crane, 1980). Birdwhistell (1952, 1970) used film to study the relationships between culture and body language (or kinesics). Using similar theoretical principles, Heath (1984) applied it to yet another field — medicine. He used videotaped medical consultations between doctors and patients to establish "how participants maintain a state of mutual involvement and sustain their integration within social interaction" (p.311). The main thrust of Heath's study was the examination of the nonverbal behavior of the participants as each one tried to involve the other through body movements. Similarly, Rodriguez and Lana (1996) used video recordings of dyadic interactions between deaf children and their communication partners to determine interaction variables. The question of validity arises, however. Are video observations as accurate or valid as other forms of observation, checklists, pencil and notebook, audio recording, and so on?

Based on their own research in the Southwest United States and Latin America, Collier and Collier claim that film captures valuable information concerning emotional and communication issues. They had the opportunity to check the validity of filmed data with data collected through other means during their research in Alaska in 1973, with a study of the educational environment in schools attended by Eskimo (Inuit) children (Collier & Collier, 1986). The analysis of the filmed data correlated with the ethnographic information and the findings of the rest of the research team. The Colliers were so convinced by their own findings that they departed from their traditional adherence to still photography to state unequivocally "only film or video can record the realism of time and motion or the psychological reality or varieties of interpersonal relations" (Collier and Collier, 1986, p.144). In discussing the observational benefits of video use, the Colliers state that film or video allows the researcher to deal with the 'what' as well as the 'how' of behavior because it can capture the 'sparkle and character' of an event. It is important to note, however, that much depends on the eye and hand of the person holding the camera. Just as the quality of other forms of traditional observation depends on the skill of the observer, the quality of the filmed or videotaped document depends on the skill of the filmer. The advantage of the videotaped observation is that the eye of the camera records all that is within its view. It is not selective at the time of recording. Traditional observation techniques are selective from the outset, leaving possibly important information out of the record and therefore lost. The videotaped record, although selective in the positioning of the camera and the breadth of the lens, still records all that is within its view. Such an inclusive record can then be analyzed by multiple viewers.

Thus, video could be used for collecting qualitative data by providing a visual document for thick description (Geertz, 1973). Thick description is description of "a multiplicity of complex conceptual structures, many of them superimposed upon or knotted to one another, which are at once strange, irregular, and inexplicit, and which (the researcher) must contrive somehow first to grasp and then to render" (Geertz, 1973, p.73). The video provides an observation tool that allows for the disentangling of

these structures. Eisner (1979) used videotaped observations in training connoisseur evaluators who were trained to "render" the videotaped information into prose. By refering to the videotaped text, Eisner's students were able to test their obervations of schools against their rendered accounts of school culture. The videotext (Rosenstein, 2000) provides the researcher with the possibility of distancing himself/herself from the data. New insights can spring from renewed viewing of the initial observation. Moreover, joint viewing can deepen understanding through reflective dialog. Description can be made thicker through discussion with the subjects/objects of the observation. The data collected through video observation is not static. Rather, the viewing and reviewing of the videotext is dyanmic and provides further information, thus enhancing the original data.

Goldman-Segall (1995) discusses the manifold possibilities presented by the use of video data. She proposes a system of layering the stories represented in a video clip. Each author can relate to the text according to his/her own meaning, creating multi-layered constellations that can serve as a basis for theory building. She introduces software tools that enable the researcher to shift through layers of data, according to a variety of criteria, in an attempt to understand the numerous accounts contained in each set of multimedia data. Maintaining that technological advances in data analysis keep up with those in data collection, she provides a means of doing so with her own software and method. Other advantages of the interactive feature of video are discussed further on in this article in the section on feedback.

In the field of sociology, Albrecht (1995) turned to video to define research problems, record behaviors, test representativeness of the records, construct hypotheses and build theory. Like Collier and Collier, he claims that watching and recording people interacting is equally important as analyzing their perceptions and interpretations. In his comprehensive examination of these issues, Albrecht presents three areas of concern: video method use in sociological research, a theoretical rationale for the method, and an examination of the law and ethics of video methods. These issues are indeed of great concern. Prosser (1998) addresses the limitations of image-based research, including the issues of 'representativeness', 'trustworthiness', 'interpretation', and reflexivity'. The issue of accurate representativeness arises when using video. I have found in years of use, however, that people, including children of all ages, respond to the presence of the camera very much as they would to the presence of an observer. Their behavior is self-concious for approximately twenty minutes and then the observer or the camera fade into the background. Thus, after twenty minutes, the recorded behavior is an accurate representative account. Once again the possibility of verifying the video text allows for validity checking by a number of viewers. The theoretical rationale for the method varies from one field of study to another, and will also be addressed at the end of this article.

Albrecht's last point concerning the laws and ethics of video methods touches on issues pertinent to all good research: ownership, exposure and availability of data. Videotaped data is so much more vulnerable to abuse. It is difficult to maintain confidentiality when the video has recorded faces and contexts as well as interactions. How is confidentiality ensured? Advances have been made that facilitate blurring of identity on the document itself, but do all researchers use such technology when dealing with videotaped data?

The issue of ownership is complex in all research. Does the videotaped data belong to the subject/object of the video or to the researcher? Often, the object of the research would like to use the video for documentation, publicity, fund raising, or other purposes. Where can the video be shown? Can the researcher show it at will to colleagues at conferences or to students during lectures? To which audiences does a waiver apply?

Based on a study of nonverbal communication in Japanese homes, Iino (1998) addresses the technical and ethical issues involved in using video recording in this way. He suggests setting up guidelines for the use

of video recordings in ethnographic research on language use. Such a set of guidelines would be welcomed for all video use.

Several basic rules hold true for all methods of observation:

1. The activity observed must be representative of other activities or principles within the frame of reference of the observation.
2. The activity observed must be broken down into manageable and meaningful units of analysis (to be reassembled after the analysis).
3. The method of observation must provide the possibility for reliability and validity checking.
4. Observations should be noted in as concrete and understandable a form as possible; vague and overgeneralized language should be avoided.

If applied scrupulously, these rules fit video use as well. Item #4, concerning the form of the observation, is particularly interesting with videotaped observations. Few researchers are willing to review hours of footage in the same way that they do not reread reams of notes. A method is needed to store and itemize videotaped observations. One method is to log the recorded document using time codes, using a similar category systems to those used with other kinds of data analysis. Recent advances in computer compatability have made computer programs a viable method of selecting, itemizing and storing, video data.

One of the problems with observations, and other forms of data collection in general, is that there is no recourse. Researchers cannot return to check their notes with actual events. To compensate for this limitation, researchers use forms of triangulation to validate data. Triangulation is a means of checking the data against two or more other methods of data collection, such as interviews, documents, or other observations of the same event (Denzin, 1970). Interesting triangulation can be conducted by comparing video records to audio records. Comparison of the solely verbal records with the combined verbal and nonverbal record can reveal valuable information. Conversely, the overwhelmingly large number of visual references available in the videotext can feed into the researcher's image bank, tending to prevent him/her from isolating specific behavior. Triangulation with other data sources can help balance the researcher's impression and ensure proper focus.

Another form of triangulataion is the use of multiple reviewers for one data source. The video is clearly well suited for such triangulation, either by having multiple viewers of one video clip or by having multiple viewing sessions by the same, or multiple observers. Furthermore 'reality' checking can be conducted with the subjects of the videotape themselves. In the fields of psychology and social work, such forms of triangulation have been used therapeutically. The use of stimulated recall (Kagan, 1984) has been effective with psychotherapy patients in locating the source or the thinking behind their behavior. Video viewing is accompanied by discussions aimed at answering the question "what were you thinking when you did or said that?". In social work, the Orion Program uses a similar technique by encouraging positive parental behavior as seen on the videotape (Weiner, Kuppermintz, and Guttman, 1994). These methods are discussed further in the section on feedback.

Technological development in the use of video combines video observation with computer analysis. This rapidly growing technology has produced refinements of techniques and precision in data collection and analysis. Noldus Technology offers a software program, The New Observer 4.1, that promises to collect, select, sort and group data for analysis. The Noldus organization (based in The Netherlands) focuses its attention on highly quantitative computer/video data collection and analysis based primarily on animal behavior, although it is currently branching out into other fields. It is now possible to observe, record in

either analog or digital, capture, transfer to the computer, and then analyze directly on the computer. Movement, temperatures, genders, can be selected for examination (Gross,1998).

Using advanced technology, Terrell, Jorgenson and Wakelin (1992) present a multimedia database that could be used for a complex system of training. Combining data collection, analysis and interactive capabilities, they are developing a means of using "raw data, in a multimedia format, to arrive at decisions". The system is aimed at observing, analyzing, and improving job performance involving use of new equipment or machinery. The object of this system is not to give feedback to the "actor", but rather to provide a document for analysis by a professional analyst. In 1992, they had to rely on combining systems (VCR and computer), but today all data and analysis can be united in one computer using the appropriate software such as that developed by Golden-Segall (1993) and referred to earlier in the article. The software program designed by Goldman-Segall permits the researcher to view layers of interpretation and sort accordingly. Thus, one videotext can be viewed through sets of varying criteria. The theory emerges from a multilayered document. Maor (2000) used a similar approach when investigating students' higher order thinking skills in a science classroom. She videotaped the students at work and then used the Macintosh multimedia research package "VideoSearch" to analyze the digital video. The more advanced the technology, the broader the possibilities.

Even before such technological progress, the uses for video observation spanned a broad area of interests. Zube (1979) conducted an investigation using filmed observation to provide information to evaluate and influence urban planning. Zube used a combination of time-lapsed photography and film to observe pedestrian behavior in a building complex in Boston. He examined the influences of high-speed wind patterns created by tall buildings on people walking through a pedestrian plaza. From his film and photographs, he mapped a detailed plan of pedestrian navigation through the wind patterns. The object of the study was not merely documentation, but rather the eventual use of the information generated by the study in the field of urban planning.

For Documentation

An additional use of video observation is for documentation. Such use can be broken down into documentation for illustrative, historical and performance assessment purposes.

Illustration of expert behavior

In the field of both in-service and pre-service teacher training, video has been used to isolate and document the attributes of a "great" teacher. It was found that video could capture the illusive quality of teaching that makes one teacher successful and another not as successful (Leinhardt, 1986). It has also been used to document student teachers' cognitive processes during classroom training sessions (Martin, 1994). Video has been used to illustrate good practices in agriculture as well. Polson (1999) found that watching a video of a master dairy farmer encouraged farmers to change their farming practices. He found that video quality was of major importance in achieving the desired results. This factor is true in all video use. Patience runs thin when viewing poorly recorded and edited video data.

Historical documentation

A new and significant development is the emergent field of videography (Hartman, 1994, 1996). Hartman and his colleagues have found that videotaping Holocaust survivors provides a vehicle for facilitating communication. Hartman contends that the video allows survivors to realize their "rage to transmit" despite their "impotence to communicate" (Hartman, 1994). The video inadvertently compensates for the humiliation of the past. Thus, the survivors are able to overcome the psychic numbing that had prevented

them from giving vivid accounts of the life that they managed to live under the horrifying circumstances of the period. This phenomenon suggests depths of cognitive, therapeutic, ethical, and even aesthetic possibilities. Such use of video is particularly relevant to the burgeoning field of qualitative research based on life stories (Clandinin and Connelly, 1998). Often the video is used for analyzing data in addition to its purely documentary function. Although ethical issues are discussed at the end of this article, the subtler ethical questions raised by such use are subjects for a separate article. When people agree to videotape their life story for a specific reason, such as a living legacy, for example, do they give permission to researchers to scrutinize their every word? How does one draw the line?

A different, and extremely significant, use of documentary film is seen in Worth (1972). He instructed Navajos in the use of the camera, allowing them to film their own culture. Worth then analyzed the results to investigate how different cultures structure their own lives through images, particularly the moving image. Central to Worth's research was the concept of 'visually mediated narratives' and interpretive strategies (Gross, 1985).

Performance assessment Another use of the videotaped document is in the field of performance assessment. Performance assessment is commonly used in conjunction with feedback. There are, however, cases where assessment is used in hiring and promoting. Therefore, formative feedback is not an integral component of the process. An example of such use of video as a convenient method of assessment in a large system is the National Evaluation System program for certification of New York State teachers (National Evaluation Systems, 1996). The videotaped document replaces individual observations of classroom performance, eliminating the necessity for observations over a large geographical area and consequently reducing the number of qualified observers needed in the certification process.

This section has presented the effective use of video for documentation. Although Ryle (1971) wrote that the camera could not capture thick description, the video camera can indeed provide a document from which thick description can be extracted. The video document can be reviewed by several observers and analyzed according to the specific purpose of the research. Goldstein (1964) advocates the use of photographic and recorded data collection because "every recording and photograph [and by extension, videotape] is a piece of objective data that can be examined without change at many levels for many different types of analyses" (p.44). This use best suits naturalistic inquiry requirements as mapped out in Lincoln and Guba (1986), with the video providing the possibility for the testing of self-reliability, inter-category correlation and inter-rater correlation.

Video Used for Feedback

Turning now to the question of feedback, the review of the literature has led me to discern three rather fuzzily defined and often overlapping areas in which videotape is used: performance assessment feedback, interactional assessment feedback, and situational assessment feedback.

Performance assessment feedback

In the first type, performance-assessment, performance is used to designate an individual's behavior in relation to the demonstration of skills desired to reach a certain goal: teaching, counseling, and communicating. Used primarily in training programs, this kind of feedback is aimed at increasing a performer's awareness of strengths and weaknesses. It is usually used in conjunction with another form of evaluation, by a supervisor, a peer or a group of either or both. Rogers (1987) combined the use of videotapes and peer evaluations to give feedback to teachers in in-service training. On the other hand, Ives (1989) suggests a system that combines computer and video technologies into a training program that

stresses self-evaluation. In response to the discussion of reflective practice in teaching, the Office of Education, Washington, DC, published a primer for teacher self-evaluation using videotaped classroom episodes (Haertel, 1993). Such methods prove particularly effective since the performers self-correct rather than respond defensively to the correction of others (Rosenstein, 2000).

Outside of the field of teacher training, but also in the area of performance assessment, video has been used extensively. For example, in on-the-job training, Decker (1993) found that videotaped feedback enhanced scores in a program to teach proper behavior in on-the-job-training of college students. The students were required to reproduce a model performance based on viewing a videotape. This kind of feedback has been used in the field of dentistry to reinforce skills of presenting information to child patients and their parents (Davis et al., 1988; Waggoner and Schneid, 1989). It has been used in the field of medicine to help doctors self-evaluate their ability to convey information to cancer patients (Meerwein et al., 1991). In the field of early childhood education, Bennett (1989) used videotaped feedback in a program for training early childhood specialists. In the performing arts, Quigley and Nyquist (1992) combined video feedback and teacher evaluation to improve students' achievement in courses, with the video used as a tool to help students develop specific performance arts' skills. Kovach (1996) discusses the use of videotape recording for testing and teaching law students. She used video as a trigger for reflection on action as well as for a tool for testing. Similarly, in physical education courses, video has been used in documenting and modeling performance as well as for self-analysis in the learning process (Mohnsen and Thompson, 1997). Although these fields of study are varied, the general principle remains the same throughout. It is assumed that viewing a video of one's performance will stimulate recall of the performance, which in turn will produce reflection on that action, which in turn will lead to learning.

Interactional assessment feedback

The second area in which video is used for feedback is interactional assessment. Here, the focus of attention lies not only in the performance of an individual, but rather in the particular dynamic of the interaction between or among individuals. The important element in interactional assessment is the behavior of a person vis a vis the people around him/her, or the way s/he communicates with those around him. People communicate through verbal and nonverbal actions. In the words of Birdwhistell (1970), communication is "in the broadest sense a structural system of significant symbols (from all the sensorily (sic) based modalities) which permit ordered human interaction" (p. 95). According to Birdwhistell, communication consists of a continuous process of the operation of audio-acoustic, kinesthetic-visual, odor-producing-olfactory, tactile, and other channels. Birdwhistell goes so far as to say that "no more than 30 to 35 per cent of the social meaning of a conversation is carried by words" (p.158).

Video is used to further the understanding of an interaction in the hope of dealing with it better in the future. This reflective and self-correcting feedback can be seen in the use of videotape in psychiatry. Berger (1978), who reviews the applications of video to the field of psychiatry both in treatment and training, refers to the development of motion picture use in his field beginning as early as 1947. He states that "video playback and other more direct confrontational approaches were seen less as 'gimmicks' and were accepted more as ancillary tools to aid in the difficult process of 'working through'" (p.173). Berger's interest in using video stems from his interest in nonverbalized behaviors of patients in groups and families. He views the videotape as a stimulus to understanding and improving such communication.

This point leads to video use in pedagogy, as understanding leads to learning. If video can be used to stimulate understanding by psychiatric patients, it could be used to stimulate understanding in other settings as well. This point relates to Erickson's (1982) contention that "the ubiquity of "instant replay" in broadcasts of sports events make intuitively sensible the notion that the researcher (and often those studied as well) will learn by reviewing tapes of everyday occurrences" (p.211). If football fans

understand the game better by seeing a video-replay, perhaps teachers and pupils will understand what occurs in the classroom better via the same stimulus.

Another field from which we may draw important lessons is child psychology. Sanders and Dadds (1992) used video in a method called video-mediated recall (VR). VR uses the video to stimulate the subject's cognition of his/her behavior at a certain time. Through this method, Sanders and Dadds were able to understand how conduct-disordered children perceived their own, as well as others', actions at a certain time. This procedure helped all those involved evaluate the interaction by answering the questions: "What were you thinking he was thinking at the time?" and "What were you thinking at the time you thought he was thinking what you thought he was thinking?". This example clearly shows the constructivist nature of interactions. The Orion program (Weiner, Kuppermintz, and Guttman, 1994) in social work is based on the use of this kind of videotape feedback for joint (client/social worker) analysis of interactions. The social worker and the clients view a videotaped session in which the parents/clients interact with each other and with their children. The social worker gives positive reinforcement to the positive elements of their behavior. Going one step further, Arauzo, Watson, and Hulgus (1994) used videotaped therapy sessions to help correct cognitive and affective disorders in the treatment of childhood sexual abuse.

VR, or "stimulated recall" as it is also called (Kagan 1984), depends on the videotape of a real situation. The principle involved here — stimulating an individual's recollection of what she or he was thinking at the time of an interaction — is aimed at providing a look into the thought process leading up to an interaction, whether it be teaching (Wear and Harris, 1994), learning (Hougham, 1992) or communicating (Sanders and Dadds, 1992). With the rise of awareness of reflection in teaching, this use of videotaped feedback has become more popular in teacher training. Cashwell (1994) and Hart (1994) address the issue of counselor self-awareness in the therapeutic relationship. Based on Kagan's (1984) supervision strategy of Interpersonal Process Recall (IPR), Cashwell (1994) sought to raise counselor awareness of covert feelings of client and self by joint viewing of videotaped sessions. Hart (1994) concentrated on improving clinical competence. Cashwell set out guidelines for conducting IPR stressing that the main source of information, comment and reflection is the counselor and not the supervisor.

In addition to videotapes of real situations, videotapes of simulated situation are also used extensively. These tapes are used in different kinds of training programs to develop communication skills. Their use in other fields suggests a wider and deeper range of results. Aaraas, Lundevall, Njolstad, and Melbye (1993) used this type of videotaped feedback to investigate how different medical doctors approach an identical patient. The discussion following the viewing the video of the roleplaying enabled doctors to see their own role in blocking communication between professional and patient. It was not the doctor's performance per se that was of concern, but rather her/his communication or interaction with the patient. Another variation was used in nursing to improve nurse-patient communication in the care of the elderly (Caris-Verhallen, Kerkstra, Bensing, and Grypdonck, 2000). A cooperative project of police officers, social workers and clinical psychologists in Hong Kong used videotaped roleplaying interviews to determine the most helpful questions and statements used while interviewing children suspected of having been sexually abused (Cheung, 1997). In a similar way, Iverson developed a system based on the use of videotapes of simulated family therapy sessions for training family therapists. According to Iverson (1986), "the micro-video analysis system, if used in its entirety, can probably improve verbal and nonverbal communication skills in virtually any group of students or trainees" (p.52). This claim has proven true in the more than a decade that has passed since it was made.

Another use of video to stimulate thought about an interaction is the value of video feedback in informing interviewing practices. Collier and Collier (1986) recommend the use of videotape feedback as a catalyst for richer, more informative interviewing. This practice is also mentioned by Dorr-Bremme (1985) in relation to ethnographic observation as the process of observing interactions through the eyes or

perceptions of the interactors. The researcher should use interviewing to enhance observation and observation to enrich interviewing. Video use facilitates this process.

Situational assessment feedback

A third area in which video is used for feedback is situational assessment. Such use emphasizes a holistic approach. Here, the main function of the feedback is to serve as a springboard for discussion to be used in further understanding and planning of an entire situation (actors, place, environment, attitude, and task). Kritzer (1974) used videotape of a family therapy session to enable individuals to self-confront their own behavior in the situation. The object was to understand why they behaved in a certain way in a specific situation. The researchers tried to have the patient tackle the question, "What were the dynamics of the situation that made me behave the way I did?" Recently more attention has been given to the situation as a major force in both performance and interaction (Hare and Hare, 1996). Along these lines, Bhimji (1997) examined verbal and nonverbal behaviors in Hispanic families in a variety of settings through analysis of video recordings made in the natural settings.

The situation is described as the circumstances that permit the actors to act and react in order to achieve a task. It is the setting, moreover, which gives them clues as to the roles they are expected to adopt (schoolyard, classroom, home, and so on) within that specific situation. This view of the importance of the situation is in keeping with Sells' (1973) scheme, which defines personality as a representation of a unique group of behavioral repertoires occurring in specific settings in different ways. Similar to the stage set in the theater, the setting or the situation helps orient the actor and the audience to what is supposed to happen (Hare, 1985).

Along these lines, video has also been used in reflective teaching programs in Iowa State University and the University of Alaska. In these programs the students are urged to assess the context as well as the content of videotaped sample lessons. They are taught to reflect upon the contribution of the situation to the behavior of teachers and pupils (Kleinfeld and Noordhoff, 1990).

The use of videotapes has been incorporated into many teacher-training programs. Such use is primarily not for research, although there is a growing trend toward combining teacher training and research (Kuhne and Quigley, 1997). In 1995, Pailliotet called the use of communal talk, pictures, and writing centered on videotapes of classroom situations *deep viewing* (Pailliotet, 1995). Based on the capacity for capturing so much of what is happening in the videotape and the availability for repeated viewing, Paillioter found that teachers were able to 'see' what they had not been aware of during the time of the taping. Deep viewing helped the teachers to understand the workings of their own classrooms better. Carraher, Nemirovsky, DiMattia, Lara-Meloy, and Earnest (1999) suggest the video and electronic media "have the potential to bridge the gap between classroom research and practice". They suggest using the rich and detailed data collected via video for "grounded discussions about teaching and learning". Keyes (2000) investigates early childhood teachers' perspectives on research and how to encourage more active participation. She presents use of the video for data collection and analysis focusing on teachers' reactions to the videotaped classes as a base for further research.

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Video Use in Program Evaluation

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Thus far, this survey of the literature has reviewed the extensive use of video for a variety of purposes other than for program evaluation. This section will deal with video use in the area of program evaluation. Program evaluation is a form of applied research. Its main purpose is to observe, analyze, and feed back into a program. Its goal is not to investigate for the sake of investigation, nor to document for the sake of documentation, nor to provide insights for the greater understanding of the academic community. These

outcomes may indeed be productive side effects of evaluation, but evaluation is meant first and foremost to assist the stakeholders of a program. It is a circular kind of research that feeds back into the object being evaluated. When the video is used for evaluation, it fits into this system. Thus, whereas video used for documentation produces a document that can be used for historical verification of an event or a period as in the use of videotaped interviews by Hartman (1996), videotapes of programs should be used as a source of information to be fed back into the program to promote improvement, change, or confirmation, of strategies.

Many teacher training programs use video in a similar fashion, having students view hours of videotapes of teachers in action. What is the distinction between this kind of teacher training and program evaluation? There is indeed a fine and sometimes barely visible line between the two. Feedback in teacher training is aimed at improving the performance of teachers in order to further their attainment of the teaching goal. In program evaluation the focus is not on individual performance, but rather on the way that the context provides or does not provide the opportunities for individuals and groups to advance successfully the goals of the program. According to situational theory, the situation is what governs the behavior of those involved in it. Thus, the situation influences the success or failure of a specific interaction or program. The main thrust of the analysis concerns how that situation is produced by the program strategies, and how that situation promotes, hinders, or neutralizes program goals. The focus is not on performance or interaction per se, but rather on the situation as provided by the specific program in question. Such focus is different from that of many uses of the video where the videotaped document is used to capture the performance of a specific teacher or the interaction between specific participants in an event.

The latest trends in teacher education, however, stress the situational context of the teacher as well as her/his one to one relationships with the pupil or the class. With greater emphasis on the reflective teacher, the line between teacher training and program evaluation gets blurry (Paillotet, 1995). If one considers teaching within a certain situation, classroom, school, or system to be a 'program', then program evaluation can work hand in hand with teacher training. And indeed, program evaluation has been incorporated slowly but surely into the area of school improvement and teacher training frameworks (Nevo, 1997).

Bessette and Tighe (1988) suggest using video in a comprehensive form of program evaluation. They point to the capability of the video to record "unforeseen but observable data" (p.45) that can be accumulated and analyzed with a view toward project development and evaluation by "management, from field supervisors to donor agency administrators" (p.45). They stress the capability of the video to capture unforeseen, yet observable, data and the ability to work with one group of stakeholders from various levels of management.

Cousins and Whitmore (1998) propose a three-dimensional framework for collaboratory evaluation: control of evaluation process, stakeholder selection for participation and depth of participation. Video lends itself to the incorporation of broad participation along all three dimensions. Such a comprehensive video program is the VIDEOSHARE Project (Walmsley and Neilsen, 1991) developed by the Montana Division of Educational Research and Services for preschool children with disabilities. In this program, the video (1) enhances family-school partnerships; (2) increases child study team effectiveness; and (3) improves therapeutic interventions. It is used for observation and feedback in a variety of ways including training, accessing information, and promoting understanding of the program on the part of the parents. This example, again, is video use for a participatory type of evaluation process involving teachers, staff, and parents in areas of observation and feedback. Another good example is found in Brazil in the Cesgranrio Foundation Evaluation Center. Here, video is used extensively for observation, data collection analysis and feedback (Firme, Leonardos, Goncalver, and Ferraz, 1997). Firme and her team used video

primarily to deal with the vast geographical distances involved in work in Brazil. The use of the video, however, proved advantageous not only in covering the geographic distances, but in bridging the gap between project operators and participants. The result presents a clear case for video-based participatory evaluation.

It is the task of evaluation to understand and promote the smooth running of the dynamic that occurs within the situational frame. In order to perform this task successfully, the evaluator has to present some captured form of the reality representing the subject of the evaluation. Rosenstein (2000) has made a theoretical case for using video as a means of capturing this representation and using it in feedback with stakeholders. The video documents of an event or events (situations) trigger reflection among stakeholders. The resulting reflection leads to learning about the program, allowing improvements when necessary and dissemination when desirable. The FAVOR method proposed by Rosenstein (1997) combines all facets of video use, feedback, observation, analysis, and reflection into a comprehensive program.

In Patton's (1978, 1997) innovative turn to utilization-focused evaluation, and in Cousins and Earl's (1992) discussion of participatory evaluation, as well as in discussions of empowerment evaluation (Fetterman, Kaftarian, and Wandersman, 1996), the use of the video is barely mentioned. This omission is clearly an oversight, in view of the capacity of the video to promote utilization, encourage participation, and facilitate empowerment.

Epistemological and Ethical issues

This survey has given an overview of the literature of video use over the past few decades. Technological advances, such as the introduction and dominance of digital over analog formats, have extended the possibilites for computer compatibility. However, we should not allow such fast moving and impressive progress to overshadow longstanding issues of meaning and ethics. Social Science researchers have always been faced with the epistemological dilemma of the source and location of knowledge and meaning. Do they reside within the codes and cultural norms of a culture? Or are they definite sets of behaviors that need no interpretation? Do we construct, deconstruct, and reconstruct knowledge ourselves, or is it there for the astute observer to see? The videotaped document highlights these questions. By fixing the event, albeit within the viewfinder range of the camera, this new technology allows the researcher to reflect on the 'reality' repeatedly and with multiple viewers. Does this inform or confuse the concept of knowledge and meaning? If life goes by quickly, is it natural to fix it in time for the scrutiny of scholars? What happens to the knowledge and meaning not captured by the camera? Do they take on an unnaturally lower significance? Such questions are relevant when making the video document.

As discussed throughout the article further questions and ethical issues arise with the analysis and use of the data. Since video documents are so real and immediate, the medium seems more intrusive and more open to abuse than other research methods. Indeed, digital formats have greatly facilitated composite texts which create new possibilities for falsification and fraud. The issue of trustworthiness assumes greater weight. The answers to these questions can be found, however, in the quality, skill and honor, of the researcher. Ethical and concientious researchers are the key to ethical and concientious research with or without the use of video.

Conclusion

In this article, I have presented a review of the literature dealing with the use of video in the social sciences and in program evaluation. Modern technology has facilitated such use. Video cameras are

lighter, less complicated and computer compatible in digital formats. It is hoped that researchers and evaluators can match their technological counterparts and develop creative, effective and productive ways of using the refined tools now available.

The table below reflects the categories proposed in the present article: observation and feedback with further divisions of feedback into performance, interactional and situational. In addition to the field of use, references and the theoretical support for each use, when applicable, are included.

Video Use in the Social Sciences

Use: Observation and Analysis		
Theoretical Base	**References**	**Field**
Combined computer video database	Noldus Technology (1995)	Animal Behavior
Nonverbal communication	Mead and Bateson (1942)	Anthropology
Constitutive- Ethnography Ethnography	Collier Jr.and Collier (1986) Iino (1998)	
		Education
	Westerman (1991)	Expert-Novice teaching
	Rodriguez and Lana (1996)	Education of deaf children
Interpersonal communications	Dorr-Bremme (1992)	Kindergarten
Cognitive process	Leinhardt (1986)	Mathematics
Stimulated Recall		
Distance learning	Martin (1994)	
	Hoover (1984)	Performance appraisal
Cognitive process High order thinking	Maor (2000)	Science teaching
Narrative research Classroom ecology	Clandinin and Connelly (1998) Gulek (1999)	Teacher training
Multi-media base, functional analysis	Terrel, Jorgenson, and Wakelin (1992)	Job Training
Nonverbal communication	Heath (1984)	Medicine
Data collection	Dershimer and Conover (1989)	Program Evaluation
	Duker (1991)	Psychology
Nonverbal Communication	Birdwhistell (1952, 1970)	Sociolinguistics
	Hall (1969)	
	Peery and Crane (1980)	

Social construction of meaning	Albrecht (1985)	Sociology
Microethnography	Erickson (1982)	
Semiotics	Kritzer and Blumberg (1974) Worth (1972)	
	Zube (1979)	Urban Planning
	Hartman (1996)	Videography

Use: Feedback for performance Assessment		
Theoretical Bases	**Reference**	**Field**
Nonverbal communication Stimulated recall Self-generated knowledge	Davis et al. (1988) Waggoner and Schneid (1989)	Dentistry
	Kovach (1996)	Education - Law School
	Mohnsen and Thompson (1997)	Education - Physical Education
Self-generated knowledge Stimulated recall Microteaching	Allen & Ryan (1969) Bennett (1989) Cashwell (1994) Deasy,. Heitzenroder, Wienke, Bloom (1991) Haertel (1993) Hougham (1992) Ives (1989) Lawrence (1994) Rogers (1987) Stryk and McCoy (1993) Wilson (1991)	Education -Teacher Training
	Decker (1993)	Job training
Self-evaluation	Meerwein et al. (1991)	Medicine
Microrehearsal	Hammer (1995) Quigley & Nyquist (1992)	Performing Arts

Use: Feedback for Interactional Assessment		
Theoretical Base	**Reference**	**Field**
Microanalysis	Erickson (1992)	Education
Microethnography Partnership research	Keyes (2000)	
Self-generated knowledge Single skills approach	Amatea et al (1980) Fichten and Wright (1983) Iverson (1986)	Family Therapy - training
Stimulated recall	Aaraas et al (1993)	Medicine

	Moran and Fredrickson (1993)	
	Caris-Verhallen et al (2000)	Nursing
Self-confrontation	Berger (1978)	Psychiatry
	Aruazo et al (1994) Cheung (1997) Weiner et al (1994)	Social Work
Use: Feedback for situational assessment		
Theoretical Base	**Reference**	**Field**
Stimulated recall Cognition, construction in a situational context	Goodwin and Goodwin (1989) Sanders and Dadds (1992)	Child Psychology
	Kritzer (1974)	Family Therapy
	Anderson (1988) Bessette and Tighe (1988)	Community Development
Organizational Learning Reflection, Learning Theory	Firme et al (1997) Messina and Fagans (1992) Rosenstein (1997, 2000)	Program Evaluation
Reflective teaching	Kleinfeld and Noordhoff (1990) Volker et al. (1986)	Reflective teacher education
	Walmsley and Neilsen (1991)	Special Education
Action Research	Carraher, Nemirovsky, et al. (1999) Kuhne and Quigley (1997) Pailliotet (1995)	Teacher training and Research

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