Information video in research and teaching defined
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Abstract
Information Video, as it is used for data collection and presentation in research and teaching, is clearly a form of mediated communication. However its existence is not clearly identifiable in the theories and models of communication centred on mass media, home recording and art creation. These either do not mention video, or merely refer to it in generic technical terms as an audio-visual aid, as in supporting a speech or as a “portable” form of television or film. This paper presents a framework engaging five key concepts or elements for the better understanding of Information Video as a communication tool - video-recording, video-viewing, video-medium, video-data, and video in a research and teaching context.

Introduction
Although not always mutually dependent, media and communication are inextricably linked and a full analysis of one would include reference to the other. This perspective is illustrated by the titles of books such as “Communication, media, and American society: a critical introduction” (Rossides, 2003), “Communication, cultural and media studies: the key concepts” (Hartley, 2002), and “Encyclopedia of new media: an essential reference to communication and technology” (Jones, 2003). Early media was seen to provide a “mechanical device which mediates between source or communicator and audience” (Moeller, 1979, p.14). This “mediated communication” has evolved to “allow communication across distance (and/or time) between people, or to allow communication in which the sender does not need to be present as the communication is both recorded and then transmitted.” (O’Shaughnessy, 1999, p.2). It saves us time and effort in communicating and messages can be dispersed to large numbers of people in different communities.

In looking at contemporary definitions of communication in Table 1 it is clear that the elements of the communication process align with the five terms given by Lasswell’s (1948) early definition of “who, says what, in which channel, to whom, with what effect” (cited in Morgan and Welton, 1992, p.3). The “transmission” model of communication as developed by Shannon and Weaver in 1949 reduces the process of communication to one of just transmitting information using static elements (information source, transmitter, channel, receiver, destination) to describe the process (Chandler, 2000). The “transactional” models of communication, however, show that the communication process does not consist of discrete elements in a state of inertia but is one that is being affected by the constant change in relationship between elements themselves, and between the elements and the environment. These can be labelled more pragmatically and reordered as the elements of: 1. video-recording at the point of source/encoding, 2. video-viewing at the point of reception, 3. video-medium as the channel, 4. video-data as the message, and 5. the effects of using video in a research and teaching context.

Table 1
Five elements of communication

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<tr>
<td>Transactional Communication in Mohan et al. (1997,40)</td>
<td>Source (stimulus)</td>
<td>Message</td>
<td>Transmits</td>
<td>Receiver</td>
<td>Reacts</td>
</tr>
<tr>
<td>Wide application communication model - Morgan &amp; Welton (1992,6)</td>
<td>Information source</td>
<td>Message</td>
<td>Channel - transmitter</td>
<td>Receiver - destination</td>
<td>Effect</td>
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In a postmodern society the participants in a communication event are seen as responding “to a phenomenon or to the environment and bring[ing] to it their own set of interpretations ... they negotiate meanings and are themselves changed by the experience” (Mohan, McGregor, Saunders and Archee, 1997, p.39). They are considered active viewers who interact with the media message rather than just being passive receivers. De Vito (1991, p.6) named two of these influential “dimensions” as the “physical”, meaning the material environment or the technical aspects of video recording and viewing, and the “social-psychological” or the human aspects of video use, which includes participant relationships, cultural understandings and so on.
These influential dimensions relate to video when it is seen as part of mass media occurring in three ways: firstly as an audio-visual aid providing examples of commercial material to support a speech or similar presentation, secondly as a means of recording “off-air” television to replay at a time which suits the individual viewer, and thirdly as a way the public can rent or own film or Television programmes.

Video is located within mass media theories as a means of providing a “portable” form of the communication media of film or television rather than as a medium in its own right. It is evident that such perceptions of the use of mass media communication are not directly applicable to Information Video as it is used in research and teaching except where it used solely as a means of time-shifting or as an example of mass media. In research and teaching it is clearly not only a form of communication using contemporary distinctive media formats but it also has a medium identity of its own.

In the 1980s and early 90s when video was a new technology which predominated in research and teaching, it attracted some discussion of its capabilities. The advent of computer technology, although incorporating video in many ways, took priority over the need to continue to explore the affecting influences of video. This paper being a review of work in this latter area thus of necessity often refers to those whose work was undertaken in the earlier period of video use.

A framework for discussing and analysing Information Video in this context can be derived from the five basic elements of video-recording, video-viewing, video-medium, video-data, and video in research and teaching. These are illustrated in Figure 1 with respect to the physical and the social-psychological dimensions identified earlier in this paper.

![Figure 1](image-url)

**Figure 1**

Information video in research and teaching: Elements and physical, socio-psychological dimensions.

At the time of video-recording there is: (a) a producer, who plans and oversees the recording process; (b) an operator, who controls the video camera; and (c1) the “live” data being recorded on to videotape. At video-viewing there is: (c2) the data on the video (now termed video-data to distinguish it from the original live data), and (d) an individual viewer with a single research and teaching goal. It should be noted, unlike the focus of an individual using video in a singular capacity, in a recording with a variety of viewers a multiplicity of aims and diverse tasks may exist.

**Elements of the Framework**

**First element: Video-recording**

This comprises the technical (production) and human (direction) factors impinging upon the recording of a video. In contrast to still photography which is seen to “contain too many meanings”, film and video “situates otherwise undecidable images within sequences that produce argument and express intention” (Pinney, 1992, p.27), with “the choice of lens, camera angle and lighting ... all contributors to the generation of connotative [implied] meaning” (Greenaway, 1991, p.23). Thus conscious, informed production and direction are vital, factors which have been widely explored by cinematic luminaries such as Eisenstein (1982), by media commentators such as the Glasgow [University] Media Group (1996, 1993, 1980) and by a proliferation of video production manuals (Gloman, 2002; Harding, 2001; Lyver, 2001; York, 2001).

In these writings guidelines are given for the differing working options such as shot sizes, camera angles, sequences, lighting, audio, editing, and so on, and comment made on their likely effect on the final product and the range of audience responses. For example, a facial close-up shot may emphasise a line of dialogue, or a low or high camera angle of a subject may reflect interpersonal standing. The juxtapositioning of sequential shots can influence viewer response dramatically as Vaughan (1992, p.106-7) graphically illustrated in “The Aesthetics of Ambiguity” such as when: (a) a child’s face framed rapidly in close-up when answering “no!” to a
question, may infer defiance; or (b) subservience may be indicated if a low placed camera with an elevated lens angle is adopted as the “point of view” of one party in an argument. Less obvious physicalities may also produce an unintended effect such as the use of dominant colours which have been shown to be influential to emotional moods where audiences may associate “blue with coldness, and red with heat” and where “lines that are tilting upwards … creates a happy mood due to our links of ‘up’ with jubilant associations as opposed to ‘down’ with miserable ones (Caals, 2003, p.1). A producer, knowing the implications of these choices, seeks to avoid unintended consequences and instead aims to create an intended meaning through knowing use of the alternatives.

Control and manipulation of the visual medium has long been subject to much theorising. Burch (1973) followed the early cinematic theoreticians Bazin and Eisenstein in attempting to open “horizons for the thinking film-maker and the student of film history and aesthetics” (p.xviii). He applied the then “embryonic … phenomenological analysis” in his book “Theory of Film Practice” presenting an analytic and descriptive set of “format codes” centred on the structuring of narrative film. DeGraff (1985), a media consultant at the University of Wisconsin-Madison, feels that Burch’s film theory raised “the consciousness of filmmakers in regard to how control of the medium may be obtained through the utilisation of specific presentational forms” (p.142). Although focused on film, Burch’s premises are applicable to the electronic medium says DeGraff (1985) who sees “no apparent reason that the taxonomic information generated by this inquiry method could not be directly incorporated into production specifications… for instructional television” (p.142), or indeed video, establishing “the relationship of the text [content of video] to its cultural and social context” (p.128). It would provide a “culturally and historically articulated rules and sets of identifiable elements” based on a framework of “presentational forms” which refer to “the manner in which textual information is organised and represented” in instructional videos (DeGraff, 1985, p.128).

It was noted in the early use of video by Hart (1984), in “Video and the Control of Knowledge”, that “a video which makes poor use of codes … will distract attention and interfere with communication”, that although the equipment may be easy to use “it needs someone with a good eye [capacity for direction] and knowledge of production to operate it effectively” (pp.89-90). In the thirty years since this advice little attention has been drawn to the effective use of recording video in teaching and research.

Production and direction also include the practical and ethical issues involved in gaining permission from participants and dealing with the intrusiveness of production personnel and equipment. The convergence of a camera lens upon an individual is often viewed with some misgiving because of suspicion that it invades privacy and that the resulting images may become a distortion of fact.

Second element: Video-viewing

This comprises the technical and human factors impinging upon the viewing of a video, the former includes both equipment and viewing environment and the latter the operator of the playback equipment as well as the nature of the visual cues contained within the pictorial features of the video and their influence on viewers.

Although there is some mention of audiences when discussing effective presentation strategies, the pragmatic issues of video viewing are seldom referred to in manuals, “Video Production in Education and Training” by Elliott (1984) being an exception, and not repeated in the years following. As Elliott himself stated, “very rarely is sufficient attention paid to the conditions in which video programmes are viewed in education and training contexts”, and he feels that “all that can be done to maximise the quality, should be done … [as] it is so important to ensure the best possible viewing conditions for video programmes” (pp.129-130).

The implications of the relationship between the viewer and the presented media images are discussed in such texts as “The making of American audiences: From stage to television, 1750-1990” (Butsch, 2000); and papers by McQuail, Blumler and Brown; Ang; and Fiske in “Media Studies: A reader” (Marris and Thornham (Eds.), 2000). These include the emotional impact of familiarity with the data being shown; gender of both viewer and screen person; facial and paralinguistic cues; the relative distance of the screen person to the viewer; the angle of viewing and vertical deviations from face level, horizontal variations from full face to profile; and clarity in picture quality. The individual particulars of viewers and the import of their knowledge, experience and background is also involved as Boyette states an “Audience [has] preferences for production techniques and presenter style and delivery” (2002, p.3).

It is evident that both technical and human factors can influence interpretation of data although the ways in which viewers perceive the characteristics of the video medium itself may induce further modifications.

Third element: Video-medium
Perceptions held of the characteristics of the video-medium as a technological facility and as a meaningful, useful and expressive instrument in research and teaching environments deserve discussion. Although Burnett (1995) was referring to community video production when he stated that “the sense that video will somehow break through the smokescreens manufactured by mainstream media and communicate directly to people in the community has played an important role in the way commentators, critics, and analysts have responded to video as a medium” (p.229), the emphasis is on perceptions of video as a medium.

After scrutinising the literature it was obvious that, as well as interactions between those people involved in terms of their role in the video-recording and video-viewing processes, there were additional interactions between users and viewers and between users and the technology arising from personal or professional beliefs, experience and training.

The video medium, apart from transmitting information, can function in such modes as an entertainment source, a vehicle for instruction, or an instrument of social control. The success of each depends to a large extent on the viewer’s familiarity with the accepted rules of video presentation and the sophistication of their visual literacy. All these factors are relevant in using Information Video in research and teaching.

Video in all its manifestations is considered to endow many faculties on its participants; it not only allows viewers to see themselves in retrospect, to witness development and change over time but it also grants empowerment to its users. An early comparison to still photographs by Collier and Collier (1986) in “Visual Anthropology” suggested that video allows its users “not only to see but also to understand the sparkle of an event, a place, a people” (p.144). Being able to operate the equipment can also promote a sense of achievement allowing the user to take the role of an interviewer or of an observer, and gain insight into the subjects who were recorded.

The goal-directed effectiveness of a video mode for research and teaching purposes is diminished when recorded information of a specialised nature is available without the circumspection of the research and teaching environment and without the essential supervision necessary for its full comprehension. Determinants of the appreciation, understanding and interpretation of non-commercial video material include viewers’ level of visual literacy which is a learned ability (Taylor, 2003), the equation of video with entertainment, and an expectation of television and film standards of technical effects. It has been noted however that the popularity of some genres, such as documentaries, has had the effect of encouraging interest in, for example, ethnographic film and video.

The degree to which Information Video can replace or supplement present research and teaching techniques is currently under debate and the outcome will reflect prevailing philosophical, cultural and ethical values.

*Fourth element: Video-data*

Technical considerations in the use of video to record or show a real event and the human understandings of how video data relate to the actual experience are now discussed.

The philosophical study of “reality” lies within the realms of ontology - the division of metaphysics dealing with the “nature of being”, and epistemology - which theorises on the nature of knowledge. As Glaserfeld (1984) says, “how we acquire knowledge of reality, and how reliable and “true” that knowledge might be - occupies contemporary philosophy no less than it occupied Plato” (p.19). Indeed, a comprehensive discussion of these approaches would have to range from the philosophies of Socrates and Plato to the Western constructivism of Kant, Husserl, Piaget and Wittgenstein, and to the postmodern cybernetic theories of virtual reality. Although this would be of interest, it suffices to say in this instance that the “reality” of video, or to adopt the more pertinent term suggested by Dyson (1995), the “imagistic representation” of reality provided by video, is an underlying epistemological concern that invites some consideration by the users (p.28).

Edwards (1998) summarises the viewer and recorder difficulties saying that:

> No two people perceive the same things when looking at a scene. Each person has a unique perceptual set, which is the result of experiences, background, personality, gender, psychological make-up, knowledge, interests, intentions and expectations. Also, each person’s perception changes from place to place and from time to time. What a photographer [videographer] perceives and decides to capture on film [video] is always dependent on these factors.
However, “the reality of the world as represented on television [or video] has indeed been transformed into an image of the world” (Winston, 1993, p.181) or as Wright (1992) suggests, “despite the film’s “real world” origins, it can be argued that the processes of selection and editing create a unique world that only really exists on the television screen” (p.274). This question of “reality versus ideality” is also raised by Signorile (1994) in referring to the reaction of people to looking at “snapshots” of themselves:

Some “don’t look like” us, we may say, while others, we are convinced, really capture our likeness. Does the first sort of picture tell a lie, or, better, give us the merest specific features of our appearance at an unrepresentative moment, while the second tells the truth about us? Which conveys reality? Indeed, what is the reality: generic or specific? (p.228)

Rheingold (1993) concludes that what is missing is what “the video does not transmit ... the “prana”, the life force, literally the breath of the other people” (p. 172).

In fact, the “authenticity” of material found in ethnographic or documentary films is produced and optimised by the conscious use of various production devices and conventions. Video viewers will have their own individual understandings of what comprises reality and their own expressed understandings, of which some may be shared. It could also, perhaps, be applied to any discussion of how to comprehend reality. Could it be that video presents an expressed understanding of reality compared to the reality which we all individually believe we experience?

This bewildering nexus between video and reality is highlighted in a quote from Willis (1995):

The real has collapsed into credibility of appearance, authenticity has become a matter of convincing detail. With the loss of the notion of a referent lodged in an allegedly pristine real, no first instance in the generation of imagery can be identified. Film, photography, video, and “the real” intertwine. (p.77)

This apprehension of the “reality” of video is crucial in providing a functional framework for the interpretation of the data which has particular importance in the research and teaching context. This aspect of video is further discussed in the paper “Reality as a TV-video image: Reality of the TV-video image” which is also included in these Conference Proceedings.

*Fifth element: Video in a research and teaching context*

Research reports were scrutinised in order to extract common groupings of video use in research and teaching. Obvious groupings were found to be in the roles played by individuals involved in the video-recording and video-viewing processes. For example, “observational” video (Adams, 2003; Anderson and Scheel, 1994; Gumperz and Field, 1995) and “feedback” video (Guadagnoli, Holcomb and Davis, 2000; Kuboviak, 1995; Struyk and McCoy, 1993) were characterised in terms of who was recording and who was viewing.

The primary use of Information Video in a research and teaching context is where the research and teaching practitioner’s attention is focussed upon the subject of the research or teaching. As shown in Figure 2 the practitioner can watch the subject on a video (practitioner-observation); watch the subject viewing a video (subject-feedback or subject-response); or watch the subject recording a video (subject-reflection or subject-recording). Roles may also be taken by others such as audio-visual staff, expert teachers, students and so on. The secondary use of Information Video by the research and teaching practitioner occurs when the practitioner presents research and teaching information on video for demonstration purposes (practitioner-presentation).
Primary uses of video in a research and teaching context

Information Video may be considered in two ways, as a Product Video (planned, and/or scripted and directed) and as a Process Video (unplanned, not scripted or directed). The five primary uses of Information Video in research and teaching as Process Video or Product Video are displayed in Table 3 showing the roles of the practitioner and the subject who comprises the video data.

Table 3
Categories of primary uses of video in a research and teaching context

<table>
<thead>
<tr>
<th>Practitioner-observation</th>
<th>Practitioner watches subject</th>
<th>Subject views video and gives feedback</th>
<th>Subject is the data of video (self)</th>
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</thead>
<tbody>
<tr>
<td>Subject-feedback</td>
<td>Practitioner watches subject</td>
<td>Subject views video and gives feedback</td>
<td>Subject is the data of video (self)</td>
</tr>
<tr>
<td>Subject-response</td>
<td>Practitioner watches subject</td>
<td>Subject records video as a reflection of self</td>
<td>Subject is the data of video (self)</td>
</tr>
<tr>
<td>Subject-recording</td>
<td>Practitioner watches subject</td>
<td>Subject records video</td>
<td>Others than subject are the data of video</td>
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</tbody>
</table>

Practitioner-observation

“Practitioner-observation” is the term used when the research and teaching practitioner’s motive is to observe the subject of the research or teaching on a video. This is coupled with an identification of who the observer is. The subject may have been recorded in a non-scripted activity, for example, whilst teaching in a classroom (Process Observation), or in a scripted activity, say, in a dramatised interview situation (Product Observation). In practitioner-observation the research and teaching practitioner is the viewer of the video and the purpose of the video is solely to provide content.

Subject-feedback

“Subject-feedback” is the term used when the research and teaching practitioner’s motive is to obtain feedback from the subject (the focus of the research and teaching process) to the viewing of their own activities on video. This is coupled with an identification of who the observer is. The subject may have been recorded in a non-scripted activity, for example, whilst supervising children’s play (Process Feedback), or in a scripted activity, say, in a dramatised role-play (Product Feedback). In subject-feedback the subject is the viewer of the video and the purpose of the video is solely to provide content.

Subject-response

“Subject-response” is the term used when the research and teaching practitioner’s motive is to obtain a response from the subject (the focus of the R & T process) to the viewing of a video showing the activities of others. This is coupled with an identification of who the observer is. The video may show a non-scripted activity such as a group discussion (Process Response), or a scripted activity such as an expert modeling counselling procedures...
(Product Response). In subject-response the subject is the viewer of the video and the purpose of the video is solely to provide content.

**Subject-reflection**

“Subject-reflection” is the term used when the research and teaching practitioner’s motive is to observe the subjects of the research or teaching using a video camera to record themselves, that is to provide a reflection of themselves. This is coupled with an identification of who is using the video. The subject may have recorded themselves in a non-scripted activity, for example, as seen in a mirror whilst eating (Process Reflection) or in a scripted activity, such as telling a story through the images recorded (Product Reflection). In subject-recording, the subject is the only one producing the video and the purpose of the video is solely to provide a production activity.

**Subject-recording**

“Subject-recording” is the term when the research and teaching practitioner’s motive is to observe the subject of the research or teaching using a video camera. This is coupled with an identification of who is using the video. The subject may record others taking part in a non-scripted activity such as a dance exercise (Process Recording), or in a scripted activity such as a role-play interview (Product Recording). In subject-recording the subject is the only one producing the video and the purpose of the video is solely to provide a production activity.

**Secondary uses of video in a research and teaching context**

**Practitioner-presentation**

“Practitioner-presentation” is the term used when the research and teaching practitioner’s motive is to present information on the subject of the research or teaching to others using video. The practitioner may separately record any, or all parts, of the above processes of research and teaching and edit them as necessary in order to exhibit the research findings or teaching methods to others. This is coupled with an identification of who the presenter is.

**Multistep use of video in a research and teaching context**

Recording to viewing are parts of one process but this may be repeated sequentially a number of times throughout a research or teaching project. For example, contiguous multi-recording and subject-feedback may occur when a student teacher (subject) giving a classroom lesson is recorded on video by the research and teaching practitioner. The student then views the video in order to repeat the lesson incorporating knowledge gained from self-viewing and feedback. This repeat lesson can again be video-recorded to provide a comparison with the first video-recorded lesson. The feedback session may itself be video-recorded for other and future studies. Finally, the research and teaching practitioner’s analytical methodology throughout the project may be separately recorded for conclusive presentation.

**Summary**

This paper shows that Information Video is a valid communication tool used in research and teaching. It is clearly identified as having a distinct existence from that in the mass media, home recordings and creative arts. The Five Element framework proposed facilitates discussion of this form of video by researchers and teachers. This comprises a focus on video at the point of recording and the point of viewing, understandings and use of the video medium, perceptions of the data as shown by the video, and the role of video in a research and teaching context. The affective factors involved, both technical and human, are discussed in order to raise an awareness of their possible influence on the presentation and interpretation of the data recorded and shown on video. These are influenced by the relationships between the research and teaching practitioners and their subjects which are categorized. The effectiveness of video as a research tool will increase if these considerations are taken into account.

**References**


