Digital Education Research: Advantages, Disadvantages, and Video Illustrations

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Abstract

Although anthropological methods have been appropriated by qualitative and mixed-methods educational researchers, visual anthropology has had virtually no impact on educational research. Furthermore, video, in general, despite its widespread impact on 21st century culture, has played only a limited role in the conducting of education-related studies, and almost no role in reporting study results. This paper explores what would be gained and lost if researchers began using video in the doing and, especially, in the reporting of their research. The paper uses clips from four author-developed research videos to illustrate the advantages and disadvantages associated with educational researchers "going digital."

Background

The so-called paradigm wars (Gage, 1989) during the final decades of the 20th century helped legitimate the use of qualitative methods in educational research. Qualitative researchers often used different labels to characterize their methods—e.g., ethnography, critical ethnography, grounded-theory-oriented research, arts-based research, phenomenological inquiry—and the different labels often signaled important methodological differences. However, virtually all types of qualitative researchers had (and continue to have) at least one thing in common: They, like their quantitative colleagues, are oriented toward producing written expository text about the phenomena studied.

To be sure, some qualitative researchers have utilized less-than-traditional types of text to report qualitative data. Qualitative researchers employing Polkinghorne's (1995) narrative analysis strategy, for example, often produce text that is more literary than expository. In addition, both within and outside of the educational research field, small groups of researchers have been inspired by the arts and have reported their research results as novels (Bandelier, 1890), drama (Goldstein, 2002), and poetry (Richardson, 1992). Video, however, has rarely been used to report research results. Furthermore, with some exceptions, video has not played a role in the educational research process, despite its widespread use in the culture beyond the ivory tower.

There is no reason, however, why the interpretivist goals of traditional qualitative researchers could not be achieved when video is used to collect and report data. Furthermore, although we, ourselves, have not yet done this, we suspect there also are no reasons critical or poststructural versions of qualitative inquiry could not use video to communicate critical- or poststructural-influenced insights from research studies.

In this paper, we will first document the limited role film and video have played in educational research. Then, the focus shifts to our efforts to use video in a decidedly different way, followed by a discussion of the advantages and disadvantages of employing the different way we have described and illustrated.

Video Use in Research

Micro-Ethnographic Educational Research

Using video in the educational research field has mostly been limited to the subfield of micro-ethnography. One of micro-ethnographers' earliest uses of video was a study done in a kindergarten/first-grade classroom from 1974 through 1976. Erickson (2011) noted that this study's goal was to record "everyday classroom events as they occurred 'warts and all'" (p. 181). Erikson also noted that, during the ensuing decades, improvements in camera and recording technology led to "a burgeoning of video research" (p. 183) within the micro-ethnographic subfield of educational research (see, also, Sherin & van Es, 2005; Tochon, 2007; Green, 2007).

A key advantage of using video in micro-ethnographic work is being able to re-watch a single event many times (Derry et al., 2010). Only such repeated viewings can produce a nuanced understanding of the meaning of a given event, Engle et al. (2014) noted. Derry and his coauthors, however, also noted that one challenge in analyzing and reporting what was recorded on video is capturing "the full complexity of all verbal and nonverbal events" (p. 20) and that standard transcripts of recorded events cannot do this adequately. Consequently, these authors reported that micro-ethnographers devised ways to notate written transcripts to mark pauses during discourse, as well as nonverbal aspects of the recorded social interaction (Angelillo et al., 2007). It was these heavily notated transcripts that become the "data" to be analyzed in most micro-ethnographic studies, Derry and his coauthors tell us. They also added, "In most cases, the [actual] video records will be left behind in the reporting phase" (p. 23).

Initially, video may have had to be "left behind" when it came to reporting micro-ethnographic results because the limitations of analog technology made sharing video footage difficult. But the advent of digital video and ever-increasing bandwidth has made working with video easier and opened the door for using video footage to report findings. Indeed, in recent years, Olinger (2020) has criticized what she calls the "audio default" of using video where the primary end goal is a written transcript, and Miller-Scarnato (2019) contended that dissemination is where "the benefits of video methods are most obviously evident" (p. 390). Unfortunately, even today most educational researchers who utilize video for data collection and, in some cases, data analysis purposes, do not use video to report their results.

Video Use in Other Fields

In other fields, video is sometimes used to report the results of research studies (Bredbenner & Simon, 2019). Even in the hard sciences, video abstracts of published studies have been utilized since at least 2007 (Spicer, 2014). These abstracts communicate "the background of a study, methods used, study results and potential implications through the use of images, audio, video clips, and text" (p. 3) and are

intended to raise the visibility of research publications. A research study by Bredbenner & Simon (2019) suggested that video abstracts are more effective at communicating study results than written abstracts.

In some fields, video has been used for more than generating abstracts. Cultural anthropology, for instance, has a long history of using visual data in the form of both still photography and film to not only record what happened in non-Western cultures, but also to communicate about other cultures' rituals and events to Western audiences. Indeed, visual anthropology has long been a well-regarded subfield within the discipline (Collier, 1967). Today, the *Journal of Video Ethnography* is an online journal that publishes peer-reviewed videos from ethnographic studies "that feature video as a central methodological component and the primary form of output" (Leavy, 2015, p. 202).

At the same time, researchers in certain academic fields have begun to think of video as an integral part of doing *and reporting* research. Fitzgerald and Lowe (2020), for example, have reconceptualized documentary filmmaking "as a research process" (p. 1). Furthermore, Luttrell and Clark (2018) recently discussed how the editing technique of montage in documentaries can "create new ways of seeing and knowing" (p. 775).

Looking to the Future

Although most educational researchers have been slow to use video to do and, especially, report research, there is finally talk of the need to develop, in the learning sciences, "models for sharing video reports of research" (Derry et al., 2010, p. 24). Discussing the sharing of video research reports is one of the goals of this paper. In the next section, we provide excerpts from four studies that used video as a "central methodological component and the primary form of output" (Leavy, 2015, p. 202).

Four Digital Studies

Study #1: Turning College Students Into Leaders

Study #1 is a case study in leadership education as practiced by the Air Force Reserve Officer Training Corps Program (AFROTC). AFROTC exists to teach college students who hope to become officers in the Air Force basic leadership skills. A key training component is Leadership Laboratory (LLAB), a yearlong active-learning curriculum in which all cadets (students) must participate each year. First year and sophomore cadets receive instruction and training during LLAB events from juniors and seniors. AFROTC officer-instructors (faculty) provide guidance and mentorship, but the junior and senior cadets are responsible for planning and implementing the program. The goal is to provide an environment for the students to experience (and experiment with) the many aspects of leadership, especially the affective aspects, under challenging (but supervised and at least somewhat controlled) conditions.

This study explored, via video, the emotion-ladened experience of participating in the Leadership Laboratory from the student perspective and attempted to capture the students' four-year journey from novice follower through competent leader. Leadership Laboratory training events were recorded along

with pre- and post-event interviews with cadet leaders, cadet participants, and officer-instructors. Video data were collected at three higher education institutions in two states over a 15-week period; eight separate LLAB events were recorded; and 21 students and five officers were interviewed on camera. Additionally, on specified days, one student at each university was given a video camera with instructions to provide a "cadet's-eye-view" of the LLAB event being conducted that day.

Data analysis and assembly of the interview footage was accomplished using a coding feature of the editing software. Interview clips relating to common themes and to specific LLAB events were grouped together and those groupings were further distilled to create singular narratives which condensed the common, recurring elements of each LLAB event and each leadership theme.

Assembling the footage was oriented toward achieving three specific goals:

1. To have the participants themselves provide all necessary framing to understand how the event was structured and the stated objectives of the event.
2. To capture the felt experience of participating in the event from the perspective of both the underclass cadets receiving instruction (or training) and the upper-class cadets running the event.
3. To show the leadership skills or lessons the event was designed to teach or reinforce.

A further goal was not to resort to either voiceover narration or the presence of a talking head narrator to frame or explain the events. Beyond being a response to aesthetic concerns, this commitment to letting the footage speak for itself was also consistent with the philosophy that the LLAB program was "owned" and run by the cadets themselves. Although the faculty provided necessary guidance and oversight, their objective was to allow the cadets to make all the decisions (and possible mistakes) associated with planning and conducting each specific LLAB event.

The overarching goal of the project was to provide a spectrum of the felt experiences associated with each LLAB event, from the first-time unfamiliarity of the new students, through the more experienced eyes of the upper-class cadets, to the officer cadre overseeing the program (who had once been new cadets themselves). This progression of felt experiences is a key aspect of the program. By understanding how these experiences are created and shaped, it is possible to see how similar techniques might be used to develop leadership skills in nonmilitary settings.

The following video excerpt shows the multiple perspectives associated with a LLAB event known as a group leadership problem (GLP): https://vimeo.com/547223267.

Study #2: Gender Integration at the United States Naval Academy

The long-term goal of the second example is to more fully understand the challenges (and successes) experienced firsthand by members of the first class of women admitted into the United States Naval Academy in 1976. To date, this study has conducted in-depth, on-camera interviews with 25% (n=14) of the women who graduated with that class. Each interview in the study lasted between 60 and 90 minutes and was conducted using a conversational approach (Patton, 2015) during which each

alumna related events and memories as they came to mind. The person conducting the interviews was a male member of the Naval Academy class of 1980 and has known many of the women interviewed since attending the academy over 40 years ago.

Analysis of the conversations revealed several common themes including isolation, sexual identity, and harassment, that went beyond the heightened pressure all first-year midshipmen were expected to endure. Another theme involved the Navy's lack of guidance about how to manage an apparent contradiction: the women were being trained as combat leaders in a service that, at the time, would not let them serve in combat.

In keeping with the digital nature of the data, analysis was done digitally using a coding feature of video-editing software. In a manner that was similar to the analysis done for the Air Force ROTC project discussed above, video clips were grouped and subsequently assembled according to themes that emerged during analysis of the interviews.

Also, like the AFROTC project, a key feature of this study is that no voices are heard other than those of the women being interviewed. Much of the truth contained in their experiences comes not only from listening to their words, but also from seeing their faces and hearing their voices. There is a raw purity in their stories when presented without comment, and the immediacy of their relived experiences demonstrates one of the benefits of presenting data in digital form without a narrator mediating the presentation. In the following video excerpt from this project, the theme of isolation is the focal point: https://vimeo.com/514999777.

Study #3: Gender Integration at the United States Naval Academy: Theoretical Perspectives

This follow-on study involved re-analyzing the data from the Naval Academy project described above by linking established theory to the real-world experiences of the women enrolled in the first Naval Academy class to include women. This study was conceived as a four-part video series in which three different organizational theories and three theories about organizational change related to gender integration were integrated ex post facto into the data collected.

This series was not intended to assess the validity of the theories referenced but, rather, was an attempt to make sense of the interview data by consciously employing specific theoretical lenses. The experiences of the Naval Academy alumna grounded the abstract theoretical discussions in concrete examples and added considerable nuance and variation to the theories employed. This form of analysis also adds the voice of the researcher to the project, a perspective that was intentionally withheld from the initial reporting of study results described above. The following clip shows the integration of established theory and the researcher's perspective with themes discovered in the original video interviews: https://vimeo.com/514997206.

Study #4: "Falling Out of the Lead": A Video Critique

Study #4 switches gears. The first three studies were all qualitative research projects grounded in the experiences of those being studied. Study #4 is a video critique/analysis of a *quantitative* policy paper.

"Falling Out of the Lead: Following High Achievers through High School and Beyond" reports the results of a multiyear longitudinal study, begun in 2002, that followed a nationally representative sample of high-achieving students of color from low-socioeconomic-status homes through high school and into adulthood (Bomberg & Theokas, 2014). The study documented their success on key indicators associated with postsecondary readiness and, also, provided largely quantitative data about the reasons some students got "off track" on their way to and while participating in higher education.

The video critique of this policy report examined both how the report's data were analyzed and how the results were graphically illustrated in the report. This clip demonstrates the value-added dimension video can contribute to communicating quantitative data and how video can be used to critique reports of complex quantitative data sets: https://vimeo.com/514999214.

Advantages and Disadvantages of Doing and Presenting Research Digitally

In this final section of the paper, the above video clips will be referenced in a discussion of some of the advantages and disadvantages of doing and reporting educational research digitally. We begin by discussing advantages.

Advantages

One obvious advantage of reporting results in video, rather than written form, is the potential such reporting strategies have for making research reports more engaging—and more accessible—for nonacademic audiences. We can imagine the second, and, possibly, also, the third video(s) discussed in the prior section being put on YouTube, and various types of people with various interests viewing the research "reports" there, even though it is not likely many of that audience would be interested in reading, or even trying to locate, a report of the same findings presented in an academic paper.

We also can imagine the "yawn factor" that would be produced by a detailed written account of the leadership labs explored in the first study discussed above. The video account, however, is likely to be interesting and engaging, even for nonacademic audiences. For example, we imagine teachers and curriculum developers, who are interested in adding an experiential component to a wide variety of programs that have nothing to do with military training, using the leadership lab video heuristically to conjure up what their experiential programs might look like and how they might be organized.

Another advantage of video is how quickly and efficiently it conveys information. It has been said a picture is worth a thousand words. If so, consider how many word equivalents are transmitted in a data stream composed of 30 pictures every second (a common frame rate for video). How many paragraphs

of description would be needed to capture the amount of detail present in a single shot of a person, location, or event?

Video also allows a researcher to present several images in sequence along with sound from interviews (as well as ambient sounds) to create an immersive experience for the viewer. Such a visceral experience can potentially lead to deeper understanding of the information presented. For example, in the second clip above, the researcher added period photographs and video from the Naval Academy to contextualize events described by the women being interviewed. Of course, images and verbal descriptions can also be presented in written works, but not in as integrated a way as they can be presented in videos in which a speaker's words are heard simultaneously with the presentation of contextual imagery.

Furthermore, videos, even of a documentary sort, can do what Langer (1957) suggested all artistic artifacts can do: give form to feeling. Years ago, Eisner (1985) argued for a more literary way of reporting research findings, a way that employed metaphor and other literary tools used by the poet, novelist, and short-story writer to re-reconstruct the phenomena a researcher observed in a way that provided a "you are there" moment of vicarious experience. Video can capture the nuances of facial expressions, gestures, and voices much more completely and more subtlety than can be captured even in an artistically rendered written account of the data a researcher collected.

Here is yet another advantage: Unlike the artistic written accounts Eisner (1985) touted, there is less concern that the researcher is writing fiction when findings are reported via video. To be sure, the researcher does edit the footage to focus viewers' attention and make the researcher's point. But the imagery and audio presented is of real people saying and doing real things. In short, the data may not be raw data, given that the researcher invariably edits the footage she or he presents for viewing, but they are much closer to medium-rare data than what one finds in Eisner's literary version of arts-based research.

Finally, we have all just lived through a pandemic during which many of us spent inordinate amounts of time viewing videos and even attending school and university classes via Zoom. Even if the pandemic finally ends, it is likely video is the wave (or at least a wave) of the future in Education. Consequently, it seems like a good idea to have at least some videos available for viewing in which the content reflects systematic research.

Disadvantages

Some of the disadvantages of reporting findings digitally are the flip sides of advantages. For example, although video makes research findings potentially more accessible and interesting to nonacademic audiences, it is important to ask: at what cost? A discussion of theory is one of the things left out of the first and second videos discussed above, and when data from the second video project were reanalyzed to insert discussions of theory in the third video, the effect is less than organic. Video excels at creating an immersive environment which allows the viewer to experience the data firsthand, but it is less elegant and engaging when talking heads or off-screen narrators espouse theory.

A related concern is the difficulty in imagining how detailed methods discussions could be comfortably fit into a research video. At best, researchers would have to attach written discussions of the methods employed and the rationale for methodological choices to the videos they create.

There is another pragmatic concern: Except when a scholar is using video to make sense of quantitative data (as was done in the fourth study described above), it is generally not possible to provide confidentiality to research participants. Members of some groups who have been greatly disadvantaged by society—persons of color, refugees, formerly incarcerated individuals, drug addicted individuals, undocumented immigrants, and the homeless come to mind—may not be willing to participate in a study if data are collected and, especially, reported via video. While the option of digitally obscuring faces or altering voices can be employed, such measures remove most of the nonverbal cues that make the use of video so valuable. Consequently, with certain people and under certain circumstances, the use of video may not be a viable option for conducting research.

Here is another obvious problem: Capturing high-quality video data requires careful attention to camera placement, lighting, and minimizing ambient noise in the environment. Often, additional equipment such as lights, tripods, and separate microphones with external recorders, may be needed to get optimal images and sound. Being able to use this equipment quickly and efficiently is an acquired skill, and, even with the best techniques, it can still be a struggle to collect quality visual data without being too obtrusive and generating a fair measure of participant reactivity.

Furthermore, even when a researcher is relatively unobtrusive, there will be people who are not necessarily from underrepresented groups, or who have not experienced exceedingly traumatic situations in their lives, who still are not comfortable in front of a camera, especially when they are informed that recordings will be shared publicly. In the second video clip above, for example, there is a woman who did not want to be photographed, although she did not mind having her voice recorded. Fortunately, all was not lost: The participant's no-photography request gave the researcher the opportunity to use historical still images of the context in which what was being discussed occurred, while still enabling the viewer to experience the emotions conveyed through the participant's voice as well as her words.

Yet another concern for researchers looking to use video is the amount of additional time, money, and effort, working with digital video requires. Learning to use video equipment, for example, has a substantial learning curve, and the constant evolution of digital technology means the available tools are constantly changing, which requires the ongoing updating of technical knowledge. One good piece of news is that those tools are not as prohibitively expensive as they once were. However, keeping up with changing hardware and software requirements does still require time, effort, and a modest amount of funding. And once the video has been captured, digesting the footage and distilling it into a polished, final product is exceedingly time consuming.

It's also important to remember the process of video editing is different from the process of writing. A researcher/editor is immersed in the images and sound of raw video data in a tactile way. As described by Rehder (2017), "Video editing is a powerful, phenomenologically embedded, deeply embodied, and self-referential way of seeing and looking" (conclusion, para. 2). It is vitally important to recognize the

influence of the researcher on the process (and of the process on the researcher) in any qualitative video study. Additionally, research posted online in video formats has the potential to access wider (and possibly global) audiences. However, producing research that could be relevant (or even understandable) across the myriad of different cultures (both academic and otherwise) where the finished work might be viewed online, brings with it a unique set of challenges. As Markham (2009) points out, rigorous reflexive analysis on the part of the researcher is key to producing qualitative work that is meaningful in this wider public forum.

Beyond the additional requirements video places on the researcher, video also creates additional requirements for the consumers of visual research products. First, a working display device (computer, tablet, smartphone) with broadband access is required. Second, viewers must set aside the time to watch the video in an environment where they will not be disturbed and where watching will not disturb others (headphones may be required). Third, watching video demands a certain amount of time and concentration. While video can be an extremely efficient form of communication, it generally must be experienced sequentially. It usually is not possible to quickly skim through or scan video for key points like a consumer of research can do with printed material.

The final disadvantage of using video to conduct and report research is the absence of a robust academic infrastructure to support the dissemination of research videos. Within the educational research field, at least, there is no universal repository for housing research videos, no generally accepted procedures for peer review, and no real analogs to research journals for easy consumer access.

Conclusion: The Road Ahead

Fortunately, the situation alluded to in the last paragraph is changing, albeit slowly. Other fields, for example, provide models of what needs to be done. The previously mentioned *Journal of Video Ethnography*, which publishes peer reviewed videos that the journal's website indicates "address a social scientific research question or subject whose study is best undertaken by the collection and exhibition of video-graphic data," can serve as a model for the sort of academic infrastructure required to support and disseminate video research in the educational research field (Journal of Video Ethnography, n.d.). Even more traditional journals, especially those that utilize an online publication outlet, can allow for the relatively seamless integration of video content with written text, as we have tried to do in one of the sections of this article. The only requirement is that editors and reviewers must be open to this option.

There also are new websites such as *ipostersession.com* where authors can create interactive displays that permit the incorporation of high-resolution images, videos & animations, voice-over narrations, and written content (*Online Interactive, Multimedia Oral & Poster Sessions*, n.d.). While, as its name suggests, this site currently specializes in creating interactive poster sessions for academic conferences, the ability to easily create, store, and present hybrid multimedia content, also opens the door to more compelling, immersive reporting of academic research in other contexts.

Perhaps the best indication that the potential for conducting and presenting video research has never been greater, comes from the commercial sector. Within the entertainment industry, it is widely acknowledged that we are now in the golden age of documentaries (*What's Up, Documentary? An "Undeniable Golden Age" For Filmmakers : NPR*, n.d.). Public acceptance of and desire for content which deals with substantive issues in a serious and well-researched manner has never been greater. For researchers hoping to make a difference with their work, there is a receptive audience waiting. All researchers need do is present rigorous research in an engaging visual manner.

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