

VIDEO-ANALYSIS SEMINAR

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Education 293V

1-3 units

Catalog Description:

This ongoing seminar is for anyone devoting a significant portion of a given semester to analyzing videotaped records as part of their research. Video-based data are now ubiquitous in educational research and this group is designed to help us all become more savvy at analyzing them. Strands of the seminar, each worth 1 unit of credit, are devoted to: participating in video-analysis sessions, reading about video-analysis methods, and completing a paper on your own video-analysis project.

The goal of this seminar about video-analysis is to provide a supportive but critical community in which to share work-in-progress and learn about guidelines in the field.

The seminar includes three strands of activity, each of which is worth 1 unit for those interested in getting course credit for their participation:

- 1) Video-analysis sessions in which members share their video-analyses in progress, get feedback from the rest of the group, and connect to the literature on video methodology.
- 2) Discussions around the growing literature about video-based methodology, including those that focus directly on methods and those that provide seminal cases of their implementation.
- 3) Completing a paper on your own video-analysis project over the course of the semester, providing drafts and/or progress to the group and the instructor along the way, meeting with her individually about them, and turning in a final, gradeable version.

Except with instructor's prior permission, new students should participate in all three activity strands as each enhances the others and provides the best introduction to the group and to video-analysis. This is also necessary for this course to fulfill any requirements including the EMST/SESAME 3rd advanced course methods requirement.

Students who wish to continue to participate in the seminar in later semesters may do so, but they will typically only enroll in the video-analysis sessions and project parts of the seminar unless there is sufficient interest and faculty availability to organize a second discussion group around the advanced readings in the annotated bibliography at the end.

SPECIFICS ABOUT EACH STRAND OF ACTIVITY

1. Video-Analysis Sessions

This is the core activity of the group as it is when we actually do video-analyses together. At each meeting, one member of the group brings some video they are still figuring out how to analyze. They show their video and present their current analyses, and we then help them improve their analyses. Presenters may also provide drafts or research memos in advance for feedback. Students learn from getting feedback on their own work, by providing useful feedback on others' work, and by seeing how others solve video-analysis problems.

2. Discussion Group Around Video-Analysis Methods Readings

Readings (see schedule) are drawn from a variety of sources, including classic articles as well as key chapters from the 2007 book *Video Research in the Learning Sciences* (edited by Ricki Goldman, Roy Pea, Brigid Barron, & Sharon Derry) and the NSF *Guidelines on Using Video in Educational Research*. Students comment on readings prior to discussion sessions in bSpace, a facilitator compiles questions and comments to get the discussion rolling, and a recorder summarizes the discussion, including a citables list, and posts it on our bSpace site.

3. Video-Analysis Course Project Papers

Everyone doing a course paper on their project will turn it in at the end of the semester. Partway through the semester, each student will write a proposal that specifies both the type of final product they will turn in at the end of the semester and one or two additional intermediate deadlines and their deliverables. One session during the semester will be devoted to discussing students' proposals. In the last class, students will be provided feedback on their penultimate drafts. Video-analysis sessions focused on a particular student's work-in-progress will also advance that student's course project paper.

GRADING

1. Students using this course to fulfill a requirement need to sign up for 3 units and a letter grade.
2. Each element of the course that you register for (i.e. final paper, participation in face-to-face & online discussions of readings, and participation in video-analyses sessions) will be weighted equally in determining your final grade.

SCHEDULE OF READINGS AND ACTIVITIES

Week 1: Introduction to the Course and Participants' Projects

- New and returning participants introduce themselves
- The instructor introduces the seminar and the syllabus
- Each participant introduces the video-analysis project they will be working on
- The seminar sets a schedule for who will be presenting at each video-analysis session

Week 2: General Perspectives on Analyzing Video Data, Part I

- Video-analysis session #1
- Discussion group reads the classic foundational article about video-analysis, which we will revisit at various points during the semester:

Jordan, B. & Henderson, A. (1995). Interaction analysis: Foundations and practice. *Journal of the Learning Sciences*, 4 (1), 39-103.

Week 3: General Perspectives on Analyzing Video Data, Part II

- Video-analysis session #2
- Discussion group reads the current statement about doing video-analysis from the NSF Guidelines as well as a paper capturing the iterative process of video-based research:

Barron, B. J. & Engle, R. A. (2007). Analyzing data derived from video records. In S. J. Derry (Ed.), *Guidelines for Video Research in Education: Recommendations from an Expert Panel* (pp. 20-28). Prepared for the National Science Foundation, Interagency Education Research Initiative, and the Data Research and Development Center. Available at: <http://drdc.uchicago.edu/what/video-research.html>

Engle, R. A., Conant, F. R. & Greeno, J. G. (2007). Progressive refinement of hypotheses in video-supported research. In R. Goldman, R. Pea, B. J. Barron & S. Derry (Eds.), *Video research in the learning sciences* (pp. 239-254). Mahwah, NJ: Erlbaum.

Week 4: Methods of Collecting Video-Data and Their Effects on Later Analyses

- Video-analysis session #3
- Discussion group reads two short complementary chapters on recording video:

Hall, R. (2000). Video recording as theory. In D. Lesh & A. Kelley (Eds.) *Handbook of research design in mathematics and science education* (pp. 647-664). Mahwah, NJ: Erlbaum

Hall, R. (2007). Strategies for video recording: Fast, cheap, and (mostly) in control. In S. J. Derry (Ed.), *Guidelines for Video Research in Education: Recommendations from an Expert Panel* (pp. 4-12). Prepared for the National

Science Foundation, Interagency Education Research Initiative, and the Data Research and Development Center.

Reread pages 88-91 of Jordan & Henderson (1995)

Week 5: Video-based Viewing Practices and Their Effects on Analyses

- Video-analysis session #4
- Discussion group reads Lemke's analysis of how our viewing conventions watching TV and other video-based media may end up unwittingly informing our research practices:
Lemke, J. (2007). Video epistemology in-and-outside the box: Traversing attentional spaces. In R. Goldman, R. Pea, B. J. Barron & S. Derry (Eds.), *Video research in the learning sciences* (pp. 39-51). Mahwah, NJ: Erlbaum.
Reread pages 43-46 of Jordan & Henderson (1995) on group viewing of video.

Week 6: Transcription Practices

- Video-analysis session #5
- Discussion group reads the classic article about transcription, reviewing part of prior articles that addressed this:
Ochs, E. (1979). Transcription as theory. In Ochs, E. & Schieffelin, B. (eds.) *Developmental Pragmatics* (pp. 43-72). New York : Academic Press.
Reread pages 47-49, 85-87, 97-103 of Jordan & Henderson (1995)
Reread Appendix A on pages 78-79 of Barron & Engle (2007)

Week 7: Alternatives to Transcription, and Coding, Part I

- Video-analysis session #6
- Discussion group reads this chapter, which presents rigorous methods for developing coding schemes based on narrative descriptions and synoptic diagrams:
Angelillo, C., Rogoff, B. & Chavajay, P. (2007). Examining shared endeavors by abstracting video coding schemes with fidelity to cases. In R. Goldman, R. Pea, B. J. Barron & S. Derry (Eds.), *Video research in the learning sciences* (pp. 189-206). Mahwah, NJ: Erlbaum.

Week 8: Coding, Part II

- Video-analysis session #7
- Discussion group reads this classic article about creating quantifiable coding categories from discourse data. Although not specifically about video-based data, the methods can easily be applied to it:
Chi, M. T. H. (1997). Quantifying qualitative analyses of verbal data: A practical guide. *Journal of the Learning Sciences*, 6, 271-315.

Week 9: Discussion of Project Proposals

- Video-analysis project proposals due three days before this seminar meeting:
 - each proposal must clearly specify what will be accomplished on the project and incorporated in the paper by the end of the semester, and
 - it also must specify at least 1 deliverable and its due date in addition to the penultimate draft that is due prior to the last class
- Each member of the seminar will be assigned other proposals to read and provide feedback on during class; the instructor will provide written feedback on all proposals

Week 10: Coding, Part III

- Video-analysis session #8
- Discussion group reads this elaborated argument against quantifying our analyses that in effect proposes criteria for when it makes sense to count and when it makes sense not to:
Schegloff, E. (1993). Reflections on quantification in the study of conversation.
Research on Language and Social Interaction, 26(1), 99-128.

Week 11: Issues Around Selection of Video Data to Analyze, Part I

- Video-analysis session #9
- Discussion group reads these complementary chapters:
 - Goldman, R., Erickson, F., Lemke, J. & Derry, S. J. (2007). Selection in video. In S. J. Derry (Ed.), *Guidelines for Video Research in Education: Recommendations from an Expert Panel* (pp. 13-19). Prepared for the National Science Foundation, Interagency Education Research Initiative, and the Data Research and Development Center.
 - Miller, K. M. (2007). Learning from video: Problems and prospects. In R. Goldman, R. Pea, B. J. Barron & S. Derry (Eds.), *Video research in the learning sciences* (pp. 321-334). Mahwah, NJ: Erlbaum.

Week 12: Issues Around Selection, Part II

- Video-analysis session #10
- Discussion group reads this article that focuses on three types of analytical schemes and their effects on how one selects data to analyze:
Erickson, Frederick. (2006). Definition and analysis of data from videotape: Some research procedures and their rationales. In J. Green, G. Camilli & P. Elmore (Eds.), *Handbook of Complementary Methods in Education Research*. Mahwah, NJ: Erlbaum.

Week 13: Managing Large Video-based Data Sets, Part I: Conceptualization

- Video-analysis session #11
- Discussion group reads this very useful article:

Cobb, P., & Whitenack, J. (1996). A method for conducting longitudinal analyses of classroom videorecordings and transcripts. *Educational Studies in Mathematics*, 30, 213-228.

Week 14: Managing Large Video-based Data Sets, Part II: Practices and Technologies

- Video-analysis session #12
- Discussion group reads this article by one of the leaders in creating technologies for enhancing the use of video in educational research:

Pea, R. & Hoffert, E. (2007). Video workflow in the learning sciences: Prospects of emerging technologies for augmenting work practices. In R. Goldman, R. Pea, B. J. Barron & S. Derry (Eds.), *Video research in the learning sciences* (pp. 427-460). Mahwah, NJ: Erlbaum.

Week 15: Feedback on Penultimate Project Drafts

- Penultimate project drafts due 4 days in advance of our class meeting
- Each seminar participant will be assigned to read one project draft in order to provide feedback in small groups. The instructor will be providing written comments to all.

ANNOTATED BIBLIOGRAPHY OF SUPPLEMENTARY READINGS FOR ADVANCED VIDEO ANALYSTS

A. General Perspectives on Analyzing Video Data

Barron, Brigid J. (2007). Video as a tool to advance understanding of learning and development in peer, family, and other informal learning contexts. [VRLS] ***Chapter providing a useful review on using video for research while also introducing the chapters by Angellilo, Rogoff & Chavajay; Ash, Callanan, Valle & Azmitia; Engle, Conant & Greeno; Hmelo-Silver, Katic, Jagarajan & Chernobilsky; Palmquist & Crowley; and vom Lehn, & Heath.***

Koschmann, Timothy, Stahl, Gerry & Zemel, Alan (2007). The video analyst's manifesto (or the implication of Garfinkel's policies for studying instructional practice in design-based research). [VRLS]. ***An ethnomethodological perspective on how to do video-analysis that is expressed concisely.***

"We label this chapter a manifesto because it is designed as a declaration of principles or policies for how a program of video research within the learning sciences might be undertaken. Our approach draws heavily upon the literature and methodology of Conversation Analysis (CA). Conversation Analysis is an area of specialization within the broader field of Ethnomethodology (EM). EM is centrally concerned with practical reasoning and the procedures (i.e., "methods") participants (i.e., "members") employ in making sense of their own actions and the actions of others. CA focuses specifically on the methods members employ in competently producing conversation. In formulating a set of principles or policies for the conduct of video research in the learning sciences, we turn to the policy statements issued by Harold Garfinkel (1967), the field's founder, for EM. Given that we propose that video research be conducted using the methods of CA and CA's positioning as a subspecialty within EM, we believe that the policies proposed by Garfinkel for research in EM should apply with equal force to research on learning practices in the learning sciences. Garfinkel's policies provide the basis for a number of key features of ethnomethodological research such as the principle that any and all settings are suitable sites for investigation ("indifference"), the treatment of meaning as a contingent accomplishment of common practices ("inspectability"), the reflexivity of social action, accountability, and the indexicality of expressions and actions."

Powell, A., Francisco, J., Maher, C.A. (2003). An analytic model for studying the development of learner's mathematical ideas and reasoning using videotape data. *Journal of Mathematical Behavior*, 22, 405-435. ***The specific new methods they propose may or may not apply to folks' projects, but the literature review is broad and gets at a lot of key issues and references.***

We review the literature on videotape methodology for observational research in mathematics education. We organize the review by presenting issues related to data collection, ethical concerns, data analysis, tapes as data versus transcripts as data, and research presentation. To address a gap we perceive in the literature, we propose a model for analyzing data in the context of investigations in the mathematical work and growth of thinking of students engaged in mathematical inquiry. The model we propose is based on nearly two decades of research experience in the Robert B. Davis Institute for Learning, Graduate School of Education, Rutgers University, New Brunswick, NJ.

Skukauskait, A., Liu, Y. & Green, J. (in press). Logics of inquiry for the analysis of video artifacts: Researching the construction of disciplinary knowledge in classrooms. *Pedagogies. Introduces a special issue on video-enabled studies of the construction of disciplinary*

knowledge with articles by West, Freitas & Castanheira, McDonald & Kelly, Mumen & Rex, and Baker & Green

B. Recording Video and the Effect of Recording Methods on Later Analyses

Lomax, H. & Casey, N. (1998). Recording social life: Reflexivity and video methodology. *Sociological Research Online*, 3(2). Available at: <http://www.socresonline.org.uk/socresonline/3/2/1.html>.

Roschelle, J. (2000). Choosing and using video equipment for data collection. In A. Kelly & R. Lesh (Eds.) *Handbook of research design in mathematics and science education* (pp. 709-732). Mahwah, NJ: Lawrence Erlbaum Associates. *Principles are good, but equipment recommendations necessarily out of date.*

C. Viewing Video

S07 Erickson, Frederick (2007). Ways of seeing video: Toward a phenomenology of viewing minimally edited footage. [VRLS]. *Among other things includes discussion of video-elicited interviews and his famous musical transcripts. Also makes the point about video not being data, but instead information used to construct data as well as some of the points Lemke (2007) below makes about how viewing conventions elsewhere shape us as analysts*

Roth, Wolff-Michael. (2007). Epistemic mediation: Video data as filters for the objectification of teaching by teachers. [VRLS]
Video is an important if underused tool not only in the construction of knowledge in the learning sciences but also in the reproduction of the field. How do we become better researchers? Video provides opportunities for collaborative analysis with novice researchers, who are, in the process, are enculturated to the learning sciences community largely through tacit modes of learning (Jordan & Henderson, 1995). How can our graduate students learn not only through tacit modes of learning by participating in our research but also through reflection on their experiences? I have recorded data analyses sessions used for many years now, thereby allowing us to get a handle on the cognitive processes of analyzing data and generating theory. Graduate students use these tapes to access the observations different participants of the earlier analysis sessions have made, a process that has been referred to as "cannibalizing the [video]tapes" (Jordan & Henderson, 1995, p. 46). That is, used in a secondary way, video not only records the analysis session and therefore constitutes a form of external, objective, and collective memory but also affords the objectification of scientific analysis itself.

D. Transcription

Atkinson, M. J., & Heritage, J. C. (Eds.). (1984). *Structures of social action: Studies in conversation analysis*. Cambridge, UK: Cambridge University Press. *Appendix that outlines the semi-standard Jeffersonian transcription scheme.*

J. A. Edwards & Martin D. Lampert (Eds.), *Talking data: Transcription and coding in discourse research* (pp. 3-31). Hillsdale, NJ: Erlbaum. *This book is also a helpful resource. Especially useful are the following chapters:*

Bloom, L. (1993). Transcription and coding for child language research: The parts are more than the whole. (pp. 149-166).

- Du Bois, J. W., Schuetze-Coburn, S., Cumming, S., & Paolino, D. (1993). Outline of discourse transcription. (pp. 45-89).
- Edwards, J. A. (1993). Principles and contrasting systems of discourse transcription. (pp. 3-31)
- Gumperz, J. & Berenz, N. (1993). Transcribing conversational exchanges. (pp. 91-121).
- Baldry, A. & Thibault, P. (2005). *Multimodal transcription and text analysis*. London: Equinox Publishing. *Recommended by Lemke*.
- Dressler, R. A. & Kreuz, R. J. (2000). Transcribing oral discourse: A survey and model system. *Discourse Processes*, 29(1), 25-36.
- Harper, D. (2000). Reimagining visual methods. In Norman Denzin and Yvonna Lincoln (Eds.) *Handbook of Qualitative Research* (pp. 717-730). Thousand Oaks, CA: Sage.
- Mishler, E. G. (1991). Representing discourse: The rhetoric of transcription. *Journal of Narrative and Life History*, 1, 255-280
- Psathas, G., & Anderson, T. (1990). The "practices" of transcription in Conversation Analysis. *Semiotica*, 78(112), 75-99.

E. Organizing Multi-Level Analyses of Video Corpora and Selecting Data to Focus On

- Ash, D. (2007). Using video data to capture discontinuous science meaning making in nonschool settings (pp. 207-226). [VRLS]
In this chapter I suggest several methods for collecting, handling and analyzing complex digital video. These methodologies serve as tools for understanding complex dialogic data and are based on sociocultural theory. I discuss the role of video data collection and analysis in interpreting how social groups, in this case the family, make sense of science dialogically, over time. I illustrate both the fruitful outcomes and the challenges to researchers in interpreting collaborative scientific meaning making, using discontinuous dialogic events as the analytic frame. These methodological issues matter to researchers, because they enable us to analyze complex sets of dialogic data without oversimplifying their meaning, either in detail or contextually. As our digital media technologies increase in power, so, too, our ability to deepen our analyses grows exponentially.
- Green, J., Skukauskaite, A., Dixon, C. & Córdova, R. (2007). Epistemological issues in the analysis of video records: Interactional ethnography as a logic of inquiry (115-132). [VRLS]
This chapter explores issues in epistemology related to digital and analog video records collected within ethnographic or longitudinal data sets. Questions to be explored include: What is the relationship between making of video records and data analysis? How can we interrogate video records to identify what they make available to be studied, analyzed and known? What roles do theoretical lenses play in collecting and analyzing video records? In addressing these questions, we draw on published work that analyzes common data sets from different theoretical positions and/or that uses multiple traditions or levels of analyses on the same data set. Using an Interactional Ethnographic approach, we examine issues in epistemology across perspectives, explore how a logic of inquiry results from the actions of researchers and analysts, and discuss the ways in which the logic of inquiry frames what can be read, interpreted, and therefore, known."

F. Coding

- F07 Alibali, M. W. & Nathan, M. J. (2007). Teachers' gestures as a means of scaffolding students' understanding: Evidence from an early algebra lesson. [VRLS] *Although this research sounds very specific, apparently it is unique for showing how one can do statistical*

hypothesis-testing within a video-based case study, thus contrasting in many useful ways with other articles.

Little is known about how teachers vary their communicative behavior in order to scaffold students' understanding in naturalistic instructional settings. Using video analysis techniques, we examined a teacher's use of gesture during a sixth-grade mathematics lesson that focused on algebraic equations. Informed by prior research on gesture in non-educational settings, we hypothesized that the teacher would regularly use gesture to "ground" her verbal utterances, and that she would use gesture adaptively in an effort to scaffold students' understanding. We found that the teacher used gesture extensively throughout the lesson. She used gesture most frequently when introducing new material and when discussing referents that were highly abstract. Pointing was the most frequent grounding act overall, and was often used to highlight abstract relations between referents. Representational gestures were next most frequent and often served to provide a familiar ground for new, abstract ideas. These data suggest that teachers use gestures as a form of scaffolding.

G. Software Tools and Repositories

Pea, R. & Lemke, J. (2007). Sharing and reporting video work. In S. J. Derry (Ed.), *Guidelines for Video Research in Education: Recommendations from an Expert Panel* (pp. 29-40). Prepared for the National Science Foundation, Interagency Education Research Initiative, and the Data Research and Development Center. ***Here, sharing includes sharing data both within a group and with other groups. Despite title, most of this is about sharing and reporting mediated by a variety of technological tools, broadly construed. Less technology-intensive stuff about this issue is considered and referenced in other chapters.***

H. Ethical Issues

Derry, S. J., Hickey, D. & Koschmann, T. (2007). Ethical concerns in video data collection. In S. J. Derry (Ed.), *Guidelines for Video Research in Education: Recommendations from an Expert Panel* (pp. 52-55). Prepared for the National Science Foundation, Interagency Education Research Initiative, and the Data Research and Development Center. *Although some of these issues are mentioned in many other papers about video-based data analysis, it is good to have one place that begins to put them together, though not everyone will necessarily agree with the consensus of these authors on several of the issues.*

I. Miscellaneous

Ervin-Tripp S. M. (2000). Studying conversation: how to get natural peer interaction. In L. Menn and N.B. Ratner (Eds.), *Methods for studying language production* (pp. 195–214). Mahwah, NJ: Erlbaum. Available as an online book at <http://www.netlibrary.com/urlapi.asp?action=summary&v=1&bookid=19382> *Focus is on elicitation for speech research, but has discussions of equipment principles, and potential effects of the camera, available objects, and settings on children's conversational behaviors.*

Goldman, R. (2004). Digital video design ethnography as a vehicle for change. *Cambridge Journal of Education*, 34(2), 147-168.

S07 Goodwin, C. (2000). Action and embodiment within situated human interaction. *Journal of Pragmatics*, 32, 1489-1522.

- Grimshaw, A.D. (1982a). Forward to special issue on sound-image records in social interaction research. *Sociological Methods & Research*, 11, 115-119. *Here are the most relevant articles from one of the first special issues about using video in research. At that time, it wasn't even done using videotapes!*
- Erickson, F. (1982). Audiovisual records as a primary data source. *Sociological Methods & Research*, 11, 213-232. *Apparently includes discussion of transcription and quantification*
- Grimshaw, A.D. (1982b). Sound-image data records for research on social interaction. *Sociological Methods & Research*, 11, 121-144.
- Grimshaw, A.D. (1982c). Whose privacy? What harm? *Sociological Methods & Research*, 11, 233-247.
- Koschmann, T. (1999). Special issue. *Discourse Processes*, 27(2). *This is an issue in which several researchers analyzed the same set of video data.*
- Alan Schoenfeld is going through the galleys for a monograph that analyzes Deborah Ball's well-known "Sean's Numbers" lesson from four different perspectives. Analyses are being done by Alan, Lani Horn, Tamar Posner, and Deborah Ball's group.
- Alan also tells me there's also a special issue of the *Journal of the Learning Sciences* from about 2002 that's similar to the *Discourse Processes* one, with a focus on "the same tool-based lesson"
- Zuengler, J., Ford, C. & Fassnacht, C. (1998). Analyst eyes and camera eyes: Theoretical and technological considerations in 'seeing' the details of classroom interaction. Report Series 2.40. Albany, NY: National Research Center on English Learning and Achievement, The University at Albany. Available by searching online and through Chris Fassnacht's website at the UW-Madison, Center for Educational Research.