

The Use of Video Recordings as an Effective Tool to Improve Presentation Skills

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Abstract

This paper examines the effectiveness of video data on graduate students' presentation performances, and their ability to learn and improve from such data. A qualitative research approach was used, including ethnography and content analysis. To help achieve data triangulation, multiple sources of data were obtained, including: students' videotaped presentations (two per student) conducted over an interval of four weeks, students' weekly learning journals and their reflections on their presentations, peer and instructor feedback on the presentations, and class observations. An ethnographic approach was used to closely examine the video data, and content analysis was applied to look at the curriculum content areas. Sixteen participants were randomly assigned to the experimental and control groups.

On the basis of this study, the use of video recordings can be a useful tool in improving students' classroom presentations. These high quality visuals have been perceived by students to improve their learning. Students in the experimental group enjoyed the engaging aspects of using video recordings and found it easy to improve their next presentations after watching their first video recordings. However, students in the control group reported: "It is extremely difficult to assess yourself without being able to review video data."

Key terms: Study of Video Data, Presentation Skills

1. Introduction

This study was funded by the Carnegie Academy for the Scholarship of Teaching and Learning (CASTL) at Buffalo State College, State University of New York. Most graduate students in our program are K–12 in-service teachers or teacher candidates who are updating their technology skills so that they can integrate technology into K–12 curriculum in classroom settings. They need the ability to deliver an effective presentation in order to provide quality lessons. However, most find presentations challenging. This study was intended to examine if using video recordings of students' presentations as an opportunity for feedback and reflection is an effective tool to improve their presentation skills. The presentation skills addressed in this study include the following aspects:

- A. Communication Skills
 - non-verbal: Appearance, facial expression, body language, gestures, eye contact
 - verbal: Volume, speed, intonation, articulation and enunciation
- B. Content
 - Introduction of topic
 - Organization of idea
 - Supporting evidence
 - Summary/Conclusion
 - Evidence of preparation
- C. Integration of technology
- D. Engaging the audience

2. Literature Review

There is abundant literature suggesting that the use of video data can significantly help improve communication skills and this technique has been widely used in teacher education (Ball & Lampert, 1999; Brophy, 2004; Calandra, Gurvitch, &

Lund, 2008; Derry, Pea, Baron, Engle, Erickson, & Goldman. 2010; Greenwalt, 2008; Guo, 2009; Hamilton, 2012; Sewall 2009; Zhang, Lundeberg & Eberhardt, 2010). Video technology has contributed much to teacher education, particularly as a means of promoting reflection and reflective practice. Brophy (2004) stresses video technology is “much more than other technologies, video has the capacity to capture the complexity and immediacy of teaching in the classroom” (iv–v). For example, video has been used to study one’s own teaching (Ball and Lampert 1999, Guo, 2007), to document best practice (Brophy 2004), to promote preservice teachers’ reflective learning (Calandra, et al. 2008), and to study teaching and learning processes (Derry et al. 2010). Furthermore, using video technology in the study of one’s own teaching practice supports teacher growth due to its distinctive capabilities to record classroom practices for future use. According to research by Allen & Ryan (1969) on videotaped microteaching/presentations conducted at Harvard University, videotaped student teachers performed better than those with standard preparation (i.e., without the use of videotaping). It was also reported that videotaping was a time efficient technique for teacher preparation—the total time involvement in the videotaped microteaching/presentations was less than 10 hours per week, as compared with the 25-hour-per-week commitment normally required. Olivero (1970) reported that a video study conducted at Stanford University revealed that microteaching/presentations without video recordings, compared to the ones with video recordings, were less effective in terms of skill mastery because the student teachers were deprived of the opportunity to see any errors. Lee and Wu (2006) conducted a video study in a Teaching Practicum course. All of the participants of the study indicated that the use of video recordings effectively enhanced their teaching experience and skills.

Previous video studies suggest that students come to know themselves better in the learning process because the use of video data provides individuals with unique opportunities to reflect on their experiences in a tangible manner, therefore allowing for improvements to be possible (Guo, 2009). For example, in a previous study (Guo, 2007) a teacher candidate disagreed with his peers’ comments on his presentation for “saying too many ‘ums’”, but was convinced when he reviewed his video-recording of his first presentation. He was determined to reduce the “ums” and made great linguistic progress in his second presentation. Another teacher candidate presented himself as a professional teacher in his second presentation by dressing up formally and delivering a presentation with more confidence after reviewing himself in a T-shirt from his video recording of his first presentation. He reflected that he “looked like an ordinary Joe on the street that no school principal would have interest in hiring him.” These self-observations, reflections, and improvement may not have occurred without the recorded video data.

Moreover, this technique has been successfully used in a variety of discipline areas. For example, studies at a school of engineering, conducted by Bussard (1982), and 26 years later by Morales and Rosa (2008), reported that many students singled out feedback from videotaping as a significant learning tool to improve their oral presentation skills. Dent and Preece (2002) used video recordings as a learning tool for improving clinical skills in a medical school. Liebermann, Katz, Hughess, & Barlett (2002) reported that video technology was effectively used to provide athletes with relevant feedback to enhance skill acquisition and sport performance. Davis (2004) reported that video recordings of a family in their natural environments were used to help parents develop meaningful communication between the parents and their children. Using video technology, the family was given opportunity to improve their unhealthy patterns of communication. Researchers (Smith & Sodano, 2011; Voth & Moore, 1997) reported that video portfolios used in public speaking classes demonstrated pedagogical value for enhancing student learning outcomes through self-assessment, reflection on learning process, and tangible evidence of performance. Voth & Moore (1997) claimed that when students were provided with the opportunity to carefully observe and reflect on their presentations, they improved their presentation skills.

Many educators (Allen & Ryan, 1969; Derry, et al. 2010; Greenwalt, 2008; Guo, 2009; Hamilton, 2012; Sewall 2009; Zhang, et al., 2010; Olivero, 1970.) agree that videotape should always be on-hand in any teacher education environment. The author argues that video provides important audio and visual information to help students reflect on and to improve their communication skills. Although previous studies on video recordings provided strong evidence that

the use of video recordings significantly helped pre-service teachers improve their performances, the Buffalo State College (BSC) students in this study were different from the participants in the literature. First, most of the BSC graduate students in this study were in-service teachers and their presentation skills were expected to be professional. However, some had difficulty with presenting. Students commonly reported anxiety and lack of confidence when presenting in front of their peers, and faculty described students' presentation delivery as inadequate. Moreover, most of the participants reported that they had never been introduced to the pedagogical use of video recordings.

This study aimed to investigate whether this particular population could improve their presentation skills. Second, all of the students were updating their educational technology skills and it was good practice for the students to learn how to use video technology to improve their presentation skills. Third, according to one of the requirements of the New York State Teacher Certification process, elementary teachers needed to provide video recordings of their teaching in order to get their New York State Teacher Certification (The New York State Teacher Certification Examinations, 2010, see note 1).

This study aimed to explore whether or not previous findings supporting the use of video as a tool to develop students' presentation skills also hold true for this unique sample. This study was guided by the following objectives:

- A. To determine if the use of video recordings in the population of graduate students in the Educational Technology Graduate Program is as effective as has been previously reported in the literature
- B. To determine whether the participants enhance their ability to integrate educational technologies into curriculum
- C. To examine whether the use of video recordings will enrich the presenters' ability to engage the audience in a constructivist learning environment
- D. To investigate whether the use of video recordings helps improve the in-service teachers' presentation skills and also improve the quality of their classroom lesson delivery (participants' reflections)
- E. If the use of video recordings is effective, then recommendations for this learning tool will be provided to other programs, including business, communication, education, sports, arts, and music at Buffalo State College, with the goal of optimizing the usage of this learning tool

3. Research Methods: An Ethnographic Approach and Content Analysis

The **sample** included 16 graduate students who took the course “**EDC 604: Authoring for Educators**” in the educational technology graduate program at Buffalo State College in the fall 2010 semester. EDC 604 is a graduate course designed for K-12 teachers to update their technology skills so that they can integrate technology into K-12 curriculum in classroom settings. The course EDC 604 was chosen as a research site for the following reason: This course requires students to use video and other multimedia in their coursework projects.

An ethnographic approach was used to analyze and interpret the visual data collection—video data collected from the graduate students in this study. Ethnography aims at recording as accurately as possible the perspective of the participants under study. “The ethnographic research studies a group in its natural setting for a lengthy time period...to identify cultural norms, beliefs, social structures, and other patterns” (Leedy & Ormrod, 2013, pp 142-143). In an ethnographic study, the researcher looks in depth at an entire group—a group that shares a common culture. Ruby (2005) argues that an ethnographic approach, as the cultural study of visual data and as an inclusive visual communication tool, has become increasingly commonplace in training programs. The increasing general acceptance of this approach bodes well for the future of educational research. An ethnographic approach respects not only the objectives of the study, but also respects the real person with a face and name and voice that articulates her or his learning experience and puts it into a digital format, which allows the researcher and the participants to revisit the events. An ethnography approach with video technology provides opportunities for users to pause, rewind, fast-forward, and replay events and teaching episodes

in order to examine and re-examine their own practice(s) (Zhang et al. 2010). As such, when one uses video to examine the teaching practice of oneself, one may more readily notice, investigate, and revisit what occurred (Hamilton, 2012).

Sampling procedures: The participants were randomly assigned to the experimental and control groups. Half of the participants were assigned to the “experimental group,” and the other half to the “control group.” All of the participants had their two presentations videotaped. Participants in the experimental group had access to their two videotaped presentation recordings while writing their reflections on their performances during the presentations; those in the control group did not have access to their recordings until they completed two of their reflections. The purpose of randomly assigning participants to the experimental and control groups was to ensure that the two groups were roughly equivalent. Establishing the equivalence of groups beforehand was important because it eliminated the possibility that students who were more confident, better communicators, etc. were also more likely to volunteer to be in the experimental group. It also eliminated the possibility that highly motivated students would be in one group, with relatively indifferent participants in the other.

All of the participants in the experimental and control groups received verbal feedback and also written feedback in the form of a rubric completed by the course instructor. The participants then wrote reflections on their two presentations to compare the differences between the two presentations and to identify if they had made any progress in the second one according to the rubrics provided. The experimental group watched their videotaped performances on a computer, and had the opportunity to evaluate their performances, prior to delivering a second presentation, which was also assessed and evaluated using the same rubric. In addition, the participants in the experimental group were asked to respond to the question of whether or not the use of video recordings helped them improve their presentation skills.

Measurement: The original rubric had been used in a few studies at an engineering school (Bussard, 1982; cited in Morales & Rosa, 2008). It has been adapted in this study, based on the differences of the participants and the research objectives. Changes include the items of “Integration of technology” and “Engaging the audience.” This form of measurement has been successfully used in previous research (Guo, 2009).

In this study, all of the students were required to deliver two presentations for the same amount of time (i.e., 10 minutes). The second presentation was one month apart from the first one. A comparison analysis was carried out to determine if there was any significant difference between the two groups in terms of the change and improvement in the second presentation. The participants of the video recordings signed a consent form to allow the video recordings to be used in educational settings.

Table 1. Presentation Rubric

Presentation Title: _____		
Presenter: _____		
Evaluator: _____		
Date: _____		
Delivery	Rating	Comments
Non-Verbal Communication:		
Appearance	1 2 3 4 5 N/A	_____
Facial expression	1 2 3 4 5 N/A	_____
Body language	1 2 3 4 5 N/A	_____
Gestures	1 2 3 4 5 N/A	_____
Eye contact	1 2 3 4 5 N/A	_____
Verbal Communication:		
Volume	1 2 3 4 5 N/A	_____
Speed	1 2 3 4 5 N/A	_____
Intonation	1 2 3 4 5 N/A	_____
Articulation and enunciation	1 2 3 4 5 N/A	_____

Integration of technology	1 2 3 4 5 N/A	
Engaging the Audience	1 2 3 4 5 N/A	
Content		
Introduction of topic	1 2 3 4 5 N/A	
Organization of idea	1 2 3 4 5 N/A	
Supporting evidence	1 2 3 4 5 N/A	
Summary/Conclusion	1 2 3 4 5 N/A	
Evidence of preparation	1 2 3 4 5 N/A	
Total Score		
Additional comments:		

Rating: 1=Poor, 2=Fair, 3=Acceptable, 4=Good, 5=Excellent, N/A=Not Applicable

Adapted from Morales & Rosa (2008)

While the video recordings of student presentations were used for in-depth study of student presentation performances, following an ethnographic approach, content analysis was also applied to look at the students’ curriculum areas, focusing on data obtained from students’ learning journals, their reflections on their presentations, classroom observations, and feedback from peers and instructor. The study was designed not to penalize students who were not randomly selected to be in the experimental group.

4. Data Analysis and Findings

The video recordings appear to be a useful tool in improving students’ classroom presentations and they were perceived by students to improve their learning. The analysis looked at multiple sources of data:

- Student self-assessment on the presentation
- Peer assessment on the presentation
- Instructor feedback on the presentation
- Student reflection on the presentation with access to video recordings for the experimental group
- Student reflection on the presentation without access to video recording for the control group

All of the findings from the above data sources were similar: The participants and the instructor observed that the use of video recordings as a tool helped improve graduate student presentation skills.

4.1 Student Reflections on the Presentations

Student reflections provided detailed information about students’ learning from their video recordings. While participants in the control group did not have initial access to their video recordings, participants in the experimental group were able to provide detailed descriptions on their presentations after watching their video recordings.

Table 2. Example of Student Summary Reflections on Presentations

Experimental Group: First Presentation	Control Group: First Presentation
“In my next presentation, I will continue the positives, such as extensive research, quality voice control and crisp, clean visuals.”	“It is extremely difficult to assess yourself without being able to review video data—the way that I felt the presentation went might be completely different from what others thought.”

Experimental Group: Second Presentation	Control Group: Second Presentation
<p>“Using video as a tool to improve classroom instruction would be useful. Its availability for review allows for closer scrutiny and accurate data collection. This provides opportunities for continued improvement, which benefit teacher and student.”</p> <p>“Again, I felt the use of the video recording improved my personal reflection on the website presentation by giving me an informative means to review. I found it helpful to see the webpage in the video as well as the presenter. I felt more aware of my language and my movements on the second presentation. In my last reflection, I challenged myself to decrease the distracter, “umm.” I succeeded at it. However, without the video data, I would not have known how well. I feel that video validates the experience of the presentation by having it available for review at any time.”</p> <p>“I have reviewed my final project presentation video and I feel I have made some progress since my last video. I tried to improve on other certain things from my last presentation. I think I gestured well and I continuously viewed the computer and then made eye contact with the people I presented to. This time, I continuously talked throughout the presentation, rather than waiting for pages to load. I also had a conclusion page flash graphic as part of my website so I would have a definite Website.”</p> <p>“I think this presentation was much better overall compared to my first presentation. For one, I was very confident about what I had worked on for so long, so it was easy to talk about. The previous presentation was almost like a wish list and I did not know what would work and what wouldn’t. Another reason this one was better was because I was so proud to display my hard work to everyone. I didn’t have a feeling of dread before I presented. Actually, I was very eager to do so! I did practice what I wanted to say.”</p>	<p>“Being in the group that did not get to see the video the first time and this time was very frustrating. I am not able to see myself so I do not know if I had a problem the first time and if I corrected it this time... I am looking forward to finally seeing both videos so that I can analyze my presentation skills and fix any issue I may have.”</p>

Students in the experimental group clearly enjoyed the engaging aspects of using video recordings and found it easy to improve their next presentations after watching their first video recordings. They were very positive toward the use of video recordings for writing their reflections on their presentations. Most of them could identify their areas for improvement and made plans for changes in their next presentations. Students in the control group were not sure about their presentations and were not able to make plans for improvement in their next presentations.

4.2 Instructor Observations

Students are empowered to control their own learning process and to improve their behaviors because they do not only focus on their physical appearances, but also focus on their presentation performances and pedagogical practices. They are determined to make changes and to practice them after they watched the first video recording of the presentation. For example, the instructor asked one of the students in the experimental group about her perspectives of her first video recording after she watched it. She said there was something that she must get rid of. She said she found her whole body was moving and shaking during the presentation. The instructor totally agreed with her analysis, and was glad that the student herself observed it and was willing to make a change. From the second video recording, the student’s whole body

was moving and shaking for a couple of seconds at the beginning of her presentation. However, she controlled her behaviors and became firm and calmed down and delivered the presentation with confidence. Her second presentation was more relaxed and professional. The instructor was proud of her improvement and the presenter was glad that her efforts were recognized. Such nonverbal body language issues might not be identified or changed easily without the video data.

Observations also revealed that it was common that most students missed the conclusion/summary in their presentations although they found each student showed strengths and weaknesses in different areas. However, the advantages of using video recordings allowed students to identify their weaknesses and therefore they could make plans for improvement:

“My conclusion was horrible because I ran out of time. I find the same problem in teaching, where my lesson will be perfectly delivered up until the very end. I definitely need to finish much stronger in the future. Next time I’ll use another favorite trick of mine to conclude -- ending with a meaningful quote.”

4.3 Student Self-assessment and Peer Assessment

An interesting finding from this study showed that the self- assessment scores on both presentations were significantly lower than the scores by peer assessments on the presentations. This can be interpreted as follows: (A) Students were stricter with themselves; (B) The learning settings were friendly and constructive; (C) Another interpretation might be the friendship support assessment. Students wanted to create a “win-win for all” situation for their class members.

Table 3. Example of Perception Differences in Presentations between Experimental and Control Groups

Experimental Group	Control Group
“I felt the use of video recording improved my personal reflection on the website presentation by giving me an informative means to review. The availability of video increased the didactic quality of the presentation.”	“I am not able to see myself so I could have been saying “um” or doing something distracting that I was unaware of. I think it is important for presenters, especially teachers, to view themselves on video to become aware of their presentation skills. That way, when presenting next time, I could be more consciousness of what I am doing and try to avoid prior problems. For instance, when I first started giving presentations, I would use the word “like” and “um” numerous times. As I gained more experience I felt more comfortable and aware of my speaking. With some practice, I think I extinguished that habit so having a video tape would have been key to make sure that I did.”
“I do not only present my plan for the website, I am also able to use the video to evaluate my style and skill. Any visual that gives you a new view into your presentational style and quality has the ability to positively affect your classroom teaching. In my next presentation, I will continue the positives such as extensive research, quality voice control and crisp, clean visuals. I will work to decrease the use of the distracter ‘um.’”	“Viewing the video recording of my presentation probably would help me better assess how to further improve. It is extremely difficult to assess yourself without being able to review video data – the way that I felt the presentation went might be completely different from what others thought.”
“Without the video, I would not have perceived the frequency of the distracter. Using video as a tool to improve classroom instruction would be useful.”	“Writing a reflection for my presentation is a bit more difficult without watching a video tape of how I did.”
“Its availability for review allows for closer scrutiny and accurate data collection. This provides opportunities for continued improvement, which benefit teacher and student.”	“But based on the rubrics I’ve been provided with, I believe that my reflections of my presentation are fairly accurate.”

The students in the control group were anxious to get their video recordings so that they could know how they were doing in their presentations and felt difficulty in writing a reflection on presentations without watching their video recordings. Compared with the control group, participants in the experimental group could write much more detailed reflections on their presentations.

Table 4. Descriptions of the Experimental Group Data

Combined Scores of the Experimental Group from Instructor, External Examiner and Peer Assessment												
Exp. Group	Non-Verbal Comm. (Total 25)		Verbal Comm. (Total 25)		Integrating Technology (Total 5)		Engaging the Audience (Total 5)		Contents (Total 25)		Final Grades (Total 80)	
	ID Code	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st	2nd	1st
1	14	23	16	23	4	5	2	3	18	22	54	72
2	15	24	16	16	4	4	4	5	20	23	59	69
3	18	19	14	20	3	4	2	5	19	22	56	75
4	17	22	15	15	4	3	3	4	22	20	60	61
5	15	24	13	20	4	4	2	4	17	24	51	74
6	16	18	16	19	4	5	2	3	22	25	61	76
7	14	22	14	20	3	4	4	4	19	20	52	66
8	17	18	18	20	4	4	3	3	19	21	60	65
Mean	15.75	21.25	15.25	19.13	3.75	4.13	2.75	3.88	19.5	22.13	56.63	69.75

Table 4 provides descriptions of the experimental group scores on the two presentations. The data focus on the comparison of the two scores generated from the two presentations. They are the average scores generated from the instructor, the external examiner, and peer assessment. The external examiner evaluated the video recordings of the participants' presentations in a blind review manner (e.g. the video data under review could not reveal whether it was from the experimental group or the control group) and assigned score for each presentation. The scores from the triangle evaluations by the peers, the instructor, and the external reviewer were summed up and then generated into average scores for each student. The participants of the experimental group and the control group earned similar scores for the first presentations. The scores of the second presentations were increased for the experimental group, but there was no statistically significant difference in the numerical scores of the second presentations by the control group, according to the instructor's and external examiner's evaluations of the presentations. The scores from the external examiner and the instructor were similar. The scores from peer assessment were higher than those from the instructor and external examiner.

5. Discussion and Conclusion

The main purpose of this study was to examine the effectiveness of video data in helping improve graduate students' presentation skills. Findings from multiple data collections (peer assessment, instructor's assessment, and external reviewer's assessment) revealed that the use of video recordings helped improve graduate students presentation skills in the area of verbal and non-verbal communications, organization, and engagement of the audience.

This study adds to the research knowledge base about the effectiveness of video data and can help guide instructors and educators in the best use of video data for effective teacher training, learning, and assessment. Technologies are providing more opportunities for both instructors and students to observe and monitor class presentations and teacher presentations. The results of this research also provide direct support for the value of video data for professional development.

Olivero claimed that “the students were deprived of the opportunity to see any errors” (Olivero, 1970) by not utilizing video recordings. In conclusion, previous studies on the use of video recordings as a tool to develop students’ presentation skills hold true for this unique sample in the study. All of the participants in this study reflected that the use of video recordings effectively enhanced their presentation skills. From the point of view of the students in the control group, this study agrees with the findings from previous studies by Olivero (1970), Guo (2007, 2009), and Hamilton (2012).

In this small sample, most of the participants were in service teachers. Some of them considered that they already had certain habits in teaching and it might be difficult to make changes. After participating in this study, they realized that there was always room for improvement and change was possible when they had the opportunity to see their own errors.

Limitations of this study: Due to the timeframe of this study (funded by the Carnegie Academy for the Scholarship of Teaching and Learning (CASTL) 2009-2010 Fellowship Program), and due to the nature of the small class size of the graduate course EDC 604—Authoring for Educators, the findings were based on a limited sample size.

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Note 1: This requirement was removed from the New York Teacher Certification Examinations after this study was complete.

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