

**Role of Animated Videos on the Learning Process
of Graduate Students**

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Abstract: The aim of this paper is to explore the role of animated videos in teaching at the graduate level. This study was conducted to answer two research questions: (a) how can animated videos be a helpful tool in the learning process for graduate students? (b) What are the challenges that may affect its use in graduate colleges? The data were collected from the Literacy and The Arts class, at the University of Arizona – College of Education, Department of Teaching, Learning, and Sociocultural Studies (TLS). Three different methods were used in conducting this research: class observation, survey, and faculty interview. The findings from the three resources have shown that using animated videos can help graduate students in the targeted classroom. The majority of the participating students reported that animated videos helped them to understand different topics of graduate courses and they recommended its use. 60% of the participants reported that the need for technology experience is the biggest challenge that may interfere with its applicability in graduate schools.

Keywords: Animated videos, graduate students, impact, challenges

Introduction:

Many schoolteachers and university professors started using different tools in teaching after computer programs became available and accessible. Some of these tools proved helpful and valuable in the learning process. However, some other available teaching tools are still not well-known to teachers or not well-researched to evaluate their effectiveness in the learning process. One of the most promising tools is using animated videos in teaching. There are some published researches about the future of using animated videos in teaching and the challenges that may interfere with its use. Furthermore, there are some published studies on the role of animated videos in the learning process for young students. Many scientific courses such as chemistry, physics, and medicine have started

using animated videos to simplify some imaginary topics. Animations assist students to better understand dynamic molecular processes in chemistry and biochemistry (Falvo, 2008). To be a helpful tool, they should provide a comprehensive illustration on a specific topic in a very simple and understandable way. From my experience in my undergraduate study, I found animated videos were very helpful especially in some theoretical courses.

This research evaluates the impact of using animated videos on graduate students. Also, it explores the current challenges that may affect the applicability of animated videos in the learning process. The questions that I wanted to answer were: (1) How can animated videos be a helpful and useful tool in the learning process for graduate students? and (2) What are the challenges that may affect its use in graduate colleges? I assumed that there would be different answers and opinions about the challenges that may interfere with this technology in education. Also, I assumed that this research would provide interesting findings to university professors and other members in the educational field.

Theoretical Framework:

Multimodality is a social approach to contemporary communication (Kress, 2010). We use many modalities in our lives on a daily basis. Multimodality theory looks at many different modes that people use to communicate with each other and to express themselves, not just through writing, which is one mode, but also through speaking, gesture, gaze, and visual forms (Kress, 2010). Sometimes, we do not know if we can control multimodality use in our lives since it affects our communication, learning, and even our personalities. In addition, Kress says, "the theory of multimodality can be found in writings and discussions related to communication theory, linguistic, media literacy, visual literacy, anthropological studies, and design studies" (p. 89).

Many educators have implemented and used the multimodality theory in teaching. One of the most recent forms of multimodality in education is using animated videos to teach students in all levels. The benefits of working under multimodality umbrella in education have been studied extensively on different educational levels especially with children and shown to have great impact. However, its impact on other educational levels, including graduate studies, is still questionable.

This study adopted the multimodality framework, to examine the impact of animated films, as a multimodality form, on the learning process in graduate schools. This was done by evaluating students' opinions, experts' opinions and analyzing the findings from the available literature.

Literature Review:

The emerging of new technologies everyday has affected different sides of our lives including the way we learn and receive information. Today's students learn best when they have an opportunity to interact with information instead of just passively listening to a teacher talk (Gurvitch & Lund, 2014). The main goal of implementing these technologies in education is to enhance the learning process and facilitate certain topics. One of the most promising technology tools in education is using animated videos. Animated videos can provide great help in understanding hypothetical and imaginary topics. Research indicates that animations are more advantageous for overall retention of subject matter if the concepts or rules taught contain a temporal course or progression, movement, or spatial relations (Rieber, Boyce & Assad, 1990). Animation has been found effective and helpful to illustrate complex structural, functional, and procedural relationships among objects and events (Park & Gittleman, 1992). In addition, some researches have shown that animated videos can enhance students'

cognitive learning. Helping students make connections between fragments of concepts teaches students to problem solve and interact with content as opposed to memorizing rules or fragments of information (Suits, 2003).

Using animated videos as supplemental tools in undergraduate and graduate courses was initially limited to the medical and scientific courses. Professors in different fields have started using animated videos in their classes as supplemental tools. According to Falvo (2008), because development tools are readily available and much easier to use today, the trend of teachers designing and implementing their own animations will continue.

There are some studies that have examined the impact of animated videos on young students in schools and shown good results (Chan & Black, 2005). However, Lowe (2004) says that very few articles have discussed the role of animated videos in the learning process for graduate students. Very few studies have explored the difficulties and challenges that may interfere with using animated videos. Professional-type video editing software programs are expensive and require a significant learning curve prior to use (Gurvitch & Lund, 2014). There are many other challenges that may interfere with using new technologies in graduate schools, which increases the demand for new studies to address and solve these challenges.

Methods:

Research Context:

I conducted this study at the University of Arizona – College of Education, Department of Teaching, Learning, and Sociocultural Studies (TLS) at the Literacy and the Arts class (one of my graduate courses this semester). The class is a small and it included 10 undergraduate and 6 graduate students. The focus of this course was to investigate literacy events fostered by integrating fine arts

activities into the curriculum. In terms of my positionality, the participating students were my colleagues and we got to know each other in this class. I know all of the participants and we have worked together in many projects and activities. In addition, the professor that I interviewed for the research is my academic advisor. Also, I have worked with him on a research project this semester. I have selected participants based on their level of study (graduates vs. undergraduates). This research included the graduate students in the Literacy and the Arts class. Since the impact of animated videos in undergraduate schools has been studied before and the purpose of this study was to evaluate the role of animated videos in graduate courses, undergraduate students were excluded.

Consent forms to distribute surveys and conduct interviews were obtained from the course professor and from all participants. For the observational part, I had permission from my classmates to observe them during our weekly classes. The consents and permissions were obtained in the seventh week. In order to protect students' privacy, the survey and the observation sheets did not include names or any identifiable information. In addition, the students were informed that they would not be exposed to any risks by participating in this research. I have no conflict of interest to the research idea or to the participants in this research. Also, I do not have any bias in selecting the study participants.

Data Collection and Analysis

The data were collected from three different sources: observation, survey, and interview. I observed the graduate students once in week ten during the Literacy and the Arts class to evaluate their instant reactions when watching animated videos. My technique was to observe students before, during, and after watching a short animated video that was shown to illustrate some points from

the class. The observation findings were recorded immediately before, during and after the video.

In week twelve, I distributed surveys to collect specific data from the graduate students. The survey was composed of four different multiple-choice questions and one open-ended question to evaluate the role of animated videos in graduate schools and to explore the challenges that can influence its use. Moreover, there was a section in the survey to add any additional comments or opinions. The inclusion criteria were all graduate students in the Literacy and the Arts class.

In addition to the survey, I conducted an interview with Dr. Betts (the professor who teaches this class) in week twelve to get his experiences and opinions about using animated videos in his graduate courses. I asked him six different questions covering his previous experiences with this technology, the challenges that he faced, and his future vision about this technology in graduate schools.

The collected data from the surveys were entered and organized in a separate electronic sheet by using Microsoft Excel to prevent any misplaced data. During the data collection phase, I conducted a quick analysis and went over random surveys to make sure that the questions are comprehensive, target my research questions, and that the answers serve my research focus. For this quick analysis I applied frequency counts and interpreted the data as percentages. The interview with Dr. Betts was recorded and transcribed immediately after the interview.

The observational data were analyzed based on the number of observed students and their questions before and after watching the animated video. The data from the surveys were analyzed by frequency counts and interpreted as percentages. The data from the interview were analyzed and classified based on type of question since the interview and the survey have almost the same questions. The patterns were identified by the type of collected (survey, interview...etc.) and were connected to each other based on type of questions. Conclusions were drawn based on the results from the three research sources.

I have established trustworthiness for the study by performing different research methods and collecting data from multiple data sources. The multimodality theory helped with collecting data from different sources since all three sources were forms of multimodality. Furthermore, getting data from different sources increased the research power and the validity of the results.

Findings:

Findings from the interview:

The interview included six different questions (see appendix C). In response to the question about the extent of using animated videos in graduate courses, Dr. Betts said that he uses animated videos in almost all of his classes every semester. Use of animated videos in classrooms is very helpful and added a great value to the learning process as Dr. Betts reported. Also, using animated videos in education has a great positive impact on the students' understanding to different topics, enhance their comprehending to the details, and expand their imagination. Both graduates and undergraduates will benefit from this technology and it should be considered in all courses. In response to the questions about the challenges and difficulties with using animated videos, Dr. Betts said that making an animated video for a class is a time- consuming process and the programs

needed to design animated videos are expensive and unaffordable for some professors.

This interview concluded that: (1) using animated videos in education is valuable, (2) we can use animated videos in all classes in undergraduate and graduate schools, and (3) the biggest challenges are the cost and the time needed to design animated videos. These findings are pretty much comparable with the findings from the surveys.

Survey Findings:

Five students out of 16 in the Literacy and the Art class participated in this study. All of the students have had classes that used animated videos as supplemental tools. From the survey findings, using animated videos in graduate courses is really helpful in education as 100% of the participating students agreed on that based on their experiences in different undergraduate and graduate classes. Also, the need for technological experiences is the biggest challenge that interferes with using animated videos in graduate schools; the majority (60%) of the participants reported that. In addition to the need for technological experiences, finding reliable sources for animated videos is another challenge as 40% of the participants reported. Moreover, the financial support is a big challenge as 40% of the students thought. No one of the participants thought that there are no challenges at all. Using animated videos in scientific classes such as physics and chemistry would be vary as half of the students reported, whereas the other half of students thought that using animated videos in any graduate class is helpful. One student only (20%) thought that animated videos could help with theoretical topics. On the other hand, designing and editing animated videos is a very time consuming process and it would be tough for professors to provide them as 40% of the students reported. The participated students also commented

on the use of this technology in graduate schools by: animated videos can also help students make connections with prior knowledge in case there are videos used to simplify concepts and make connections. The participants have suggested some possible solutions to overcome the challenges such as: (1) establishing a department responsible for providing helpful and supplemental tools such as animated videos, (2) hiring expert people in technology or talented students to design and provide these helpful materials, and (3) contracting specialized companies in technology.

Findings from observation:

The video that was shown in this class was helpful for students. Based on their reactions before, during and after the video, it helped them to understand the Engestrom model of Cultural-Historical Activity Theory. Before the video played, the students asked many questions about the topic, and they seemed having difficulties digesting the concept. During the video, all students were paying attention to the video material including some students who were busy with other stuff before the video. After the video finished, there were a few questions about the topic and most of those questions were just to ensure that they got the right concept, rather than demonstrating confusion. We can understand from this observation that, using animated videos may enhance students' understanding to some topics. The role of multimodality is obvious in this part since we relied on different forms such as students' reactions and their behaviors during the class.

These findings have shown that using animated videos in graduate schools can be helpful. Also, the findings from the interview and the survey have explored the difficulties associated with using animated videos and the challenges that interfere with its use in graduate schools. Moreover, these two research parts

have provided different solutions on how to overcome the difficulties such as hiring expert people and contracting with specialized companies in animated videos.

All of these findings support the multimodality theory in education and that students can learn from different learning styles and methods such as animated videos. Also, by applying various modes of learning we can enhance students' understanding and learning.

Discussion/Implications:

I have gained many skills by conducting this research. It helped me to understand different concepts in research. Also, it helped me to apply my own ideas, to examine my hypothesis, and to answer different questions.

The most significant understanding is that applying new technologies in education can enhance the learning process, improve students' understanding, and enrich their knowledge. Based on the theory of multimodality, using different technologies can facilitate many aspects in our lives.

I anticipate that this research will be interesting for professors who teach graduate classes and for researchers who would like to know the effectiveness of new technologies in education. The research has provided some benefits of using animated videos in graduate schools and the challenges that may interfere with its applicability. Also, the research have provided some solutions about how to apply this technology and how to avoid and overcome the challenges for those who are interested in using animated videos in teaching. The research findings could be used to change some teaching practices and could be extrapolated to other fields in graduate schools.

One of the questions that emerged during conducting this study was: is it possible that universities can hire programming companies to design and provide

animated videos per request? In my opinion, this inquiry can be answered once we have well-designed studies show universities and education planners the positive impact of using this technology in education by measuring its effects on students in different levels.

Conclusion:

This study has reflected on multimodality theories defined by (Kress, 2010). As a multimodality form, using animated videos in graduate schools was studied and evaluated by performing three different research techniques. This research has demonstrated that using animated videos in graduate schools may be helpful and can have a positive impact on the learning process. Also, it has explored the challenges and the difficulties that can affect on animated videos use in education. All of these findings can be used to overcome the difficulties that interfere with using animated videos in graduate schools and help implementing this technology in education.

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Appendix A

Consent for Participation in an Interview

Title: Animated videos.

Researcher: Aaliah Alhissan.

I'm a student at the University of Arizona in the Department of Teaching, Learning, and Sociocultural Studies. I'm studying the role of animated videos on the learning process for graduate students.

During this study, you will be asked to answer some questions about animated videos in classrooms and your experience with them. This interview was designed to be approximately half an hour in length. However, please feel free to expand on the topic or talk about related ideas. Also, if there are any questions you feel you cannot answer or that you do not feel comfortable answering, feel free to indicate this and we will move on to the next question.

I would like to audio-record the interview; if you prefer that I not record the interview, please let me know and I will take notes instead.

If you have any question about the interview please contact me by email at Alhissan@email.Arizona.edu or by phone (617)-586-6723.

I have read the above form, and, I consent to participate in today's interview.

Participant's signature

Participant's name (printed)

Interviewer's signature

Date

Appendix B**Consent to Participate in a Research Study****Title: Animated Videos****Researcher: Aaliah Alhissan.**

Dear Classmates:

My name is Aaliah Alhissan, a student at the University of Arizona in the Department of Teaching, Learning, and Sociocultural Studies. I'm studying the role of animated videos on the learning process for graduate students.

If you agree to participate in this study I will observe you during the *Literacy and the Arts* class. I will write note about what I observe (your names will not be included).

If you have any question about the observation please contact me by email at Alhissan@email.Arizona.edu or by phone (617)-586-6723.

If you agree to participate in this study, please sign and print your name below.

Participant's signature: _____.

Participant's name (printed): _____.

Date: _____.

Appendix C

Interview Questions

- 1) Do you use animated videos in all of your classes?
- 2) How long have you been using this technology in classrooms?
- 3) From your experience, do you think that using animated videos in graduate courses is effective and helpful?
- 4) What are the challenges to using animated videos in graduate schools?
- 5) Are there specific courses you think animated videos should be used in?
- 6) How do you see the future of animated videos in classrooms?

Appendix D

Student Survey

My research project is looking at whether using animated videos in graduate courses is helpful or not and what are the challenges that can affect on its use in graduate colleges.

1) Have you had any class in which animated videos were used as supplemental tools?

- Yes.
- No.

2) If yes, do you think that animated videos helped you in understanding topics?

- Yes, very helpful.
- Yes, but to a limited extent.

No, were not helpful.

Not applicable

3) In which graduate courses do you think animated videos will provide significant help: (you can choose more than one answer)

Courses that are based on imagination.

Theoretical courses.

Scientific courses (e.g.: Physics, Chemistry...etc.)

Medical courses (e.g.: Physiology, anatomy...etc.)

Animated videos can be used in any graduate courses.

4) What challenges do you think can impact using animated videos in graduate courses:

Financial challenges (Designing animate videos is costly)

Technological challenges (Using animated videos need wide technological experience)

Source challenges (There are limited number of reliable sources for animated videos)

There are no challenges at all.

Other challenges: _____

5) If you find animated videos helpful in graduate courses, How can animated videos be helpful and useful tools in the learning process for graduate students?

If you have any comments, thoughts, or opinions please add them here.