The Impact Video Style can have on Perception of Coyotes

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Abstract:

Video continues to become an important part of higher education as it has been integrated into formal classrooms, serves as a foundation of many hybrid courses, and is often the main information-delivery mechanism in online courses (Brame, 2016). The goal of this study is to gain an Understanding of how to use technology to remain relevant to a new generation of students while engaging them in an interactive learning process. The educational vlog-style video used in this study provides the audience with information and background about coyotes as well as informative ways to coexist and live with coyotes. It was predicted that the results of how viewers perceive coyotes before watching will be different from the results after watching the video. A total of 60 responses were submitted and 75% of them have never watched an educational video about coyotes. Two of the seven Likert scale questions were determined to have statistically significant differences in their response scores. Overall, there was no significance in the impact the style of video has on the perception of coyotes.

Introduction:

Video technology has become one of the fastest growing and evolving industries throughout our time on earth and now it is impacting the way we teach and learn. Educational video technology started in the 1960's with television films (Dzara et. al., 2020). Video conferences popped up in the 90's but it wasn't until the 2000's that video technology became so widely available with smartphones, streaming capabilities and YouTube (Dzara et. al., 2020). With the ever-changing use of technology, schools and universities are struggling to keep up. Dzara and colleagues state, "The possibilities offered by new technology can appear overwhelming, challenging and unsettling to traditional teaching" and continue to address the issue that not enough information is known about the best practices for using video technology in the classroom (2020)." The goal of this study is to gain an understanding of how to use technology to remain relevant to a new generation of students while engaging them in an interactive learning process. How can video technology be used to enhance education? What is currently known about educational video technology? Can video style impact the video's effectiveness?

Video continues to become an important part of higher education as it has been integrated into formal classrooms, serves as a foundation of many hybrid courses, and is often the main information-delivery mechanism in online courses (Brame, 2016). Dzara and colleagues created a list of 18 educational video styles, none of which included video-blog style educational videos. Little is known about the effectiveness of vlog-style videos, but they continue to be increasingly popular. Regardless of this, Dzara did include YouTube videos within their comparison of distinguishing qualities in different styles of video. These distinguishing qualities included: form of implementation, didactic goals, the four koumi domains, and interactive elements. It is important to note that the 4 koumi domains are assisting cognition, providing realistic experiences, nurturing motivations/feelings and demonstration of skills (Dzara et. al., 2020). To support these qualities, Brame discussed three elements that can help educators maximize their usage of videos including cognitive load, student engagement and active learning (2016). Taking all this into consideration, it is recommended that educators keep videos brief, use complementary audio and visual elements, use signaling to highlight important ideas or concepts, use a conversational, enthusiastic style to enhance engagement, and lastly, embed videos in a

context of active learning by using guiding questions or interactive elements (Brame, 2016). When Dzara and colleagues compared qualities in different video styles, they determined that YouTube videos were the most versatile. This speaks to the effectiveness of contemporary educational videos and the use of video-blog style videos in education to ensure all of these qualities are met.

The educational vlog-style video used in this study provides the audience with information and background about coyotes as well as informative ways to coexist and live with coyotes. Coyotes have adapted to cities, because there is an abundance of food, plenty of water, and access to shelter (Etheredge, 2013; Hooper, Gaudin & Wilson, 2016;). Even though coyotes act as pest control and fill crucial roles for our ecosystems, humans do not think highly of the species. Coyotes have a reputation of attacking livestock, killing pets or damaging property (Brewster et. al., 2019). As coyotes continue to grow and learn, their responses are modified and adjusted. With the increased interaction with humans in cities, coyotes have switched from being more active during the day (diurnal) to being more active at night (nocturnal) when there is less human activity (Etheredge, 2013; Gompper, 2002). Over the years as more coyotes have moved into the southeast, residents of the area have complained more about coyotes prompting governmental states to have discussions on how best to manage the species. In certain states, there are coyote hunting seasons which puts wolves and other animals at greater risk. In Georgia, coyotes are not legally protected and considered a non-native or invasive species meaning they can be hunted at any time. However, as coyotes tend to do, they persevere and continue to grow, even increasing their litter sizes in response to the hunting (Kilgo et. al., 2017). If humans stopped hunting them, coyotes could maintain their own population size. Thus, learning to coexist with them becomes increasingly more important.

This study investigates the impacts of educational vlog-style video on people's perception of coyotes in the Atlanta Metropolitan Area. Discovering the impact these styles of videos can have on a person's opinion is important as social networking and media continue to grow, become increasingly popular, and impact our daily lives. As social media and social networking continue to become the norm on finding and spreading information, it is important to determine how it might impact particular conservation issues. The next generation is scrolling through Facebook, Instagram, and TikTok everyday and absorbing a lot of information. This is the era of

information technology. Along with that, vlog-style videos or better known as YouTube videos are becoming more prevalent and more popular. Dearolph discusses in her paper titled "Vlogging the Museum" how little the effects social media in educational settings has is studied or discussed (2014). Research has shown that social influence by way of social networking or social media can be very effective at creating change (Abrahamse & Steg, 2013). Social influence is described as the ways behavior can be impacted by what people do or by what other people think (Abrahamse & Steg, 2013). It is this idea that social media can have a huge impact on conservation with the help of leaders in the area who already have a decent following.

It is predicted that the results of how viewers perceive coyotes before watching will be different from the results after watching the video. My prediction is that perceptions of coyotes will be more respectful after watching the video.

Methods:

Study Area

Nestled within the foothills of the Appalachian Mountains and the piedmont forest, the Metro Atlanta Area is the ninth largest metropolitan statistical area in the United States and the third largest metropolitan region in the southeast. Based on the 2010 Census Bureau, the area has a population of over 6 million people and spans 8,685 square miles. Around 90% of the population has a computer in their house and around 80% are subscribed to a broadband internet service. Of the population that is 25 years or older, 90.9% graduated from high school.

Data Collection

A Google Forms survey was constructed in which an educational vlog-style video was embedded. The survey included a series of scale questions for the viewer to answer before watching the video and a series of scale questions after they watch the video. The survey was launched on Facebook, Instagram and sent to volunteers and employees of Zoo Atlanta via listserv emails with Outlook. The survey did not take more than 15 minutes to complete including watching the video. As the survey was electronic, it was assumed that all people who had Internet access had the ability to access the survey, received an email, or found the survey via social networks. Thus, convenience sampling was used to create a sample population.

The survey is linked in the appendix below. The survey includes five general questions, nine scale questions, seven of which are repeated after a video that is embedded in the survey. Video used in the survey was created, written, and filmed by me in an educational vlog-style in effort to keep the viewer engaged throughout the video while also providing the important information about coyotes. The educational vlog style video is also separately linked via YouTube in the appendix below. Each scale question used a 5-point Likert scale ranging from 1 meaning "strongly disagree" to 5 meaning "strongly agree" in order to quantify the respondent's attitude, perception, and knowledge.

Data Analysis

Once data collection was completed, Google Forms automatically calculated and created pie charts for the non-Likert scale entry questions in section one of the survey. For the Likert scale questions in sections two and four, data from Google Forms was transferred to Google Sheets where the bulk of analysis was completed. In Google Sheets, means and standard deviations of each scale question before and after the video was determined. Using this data from before and after the video, a paired sample t-test was performed to calculate the p-value for each question. This value was compared to the significance level ($p< 0.05$) in order to determine if the difference is statistically significant. It is noteworthy that there were also two Likert scale questions included in the survey before the video that were not repeated after the video. For these questions, the means were determined.

Results:

A total of 60 responses were submitted. Of those 60 respondents, 53 (88.3%) still currently live in the Metro Atlanta Area. About forty-two percent (41.7%) have lived in the area for over 15 years and 35% of the respondents have lived in the area for less than five years. Below Figure (1) shows a breakdown in percentages of how long the respondents have been living in the area. Over fifty-six percent (56.7%) have personally not had a direct interaction with a coyote near their home meaning they have seen one or maybe been attacked by one. Thirteen percent of the respondents have had an indirect interaction with a coyote meaning they may have had a pet or livestock animal injured or killed by a coyote. The last question asked respondents to report whether or not they have watched an educational video about coyotes

before but 75% said they had not.

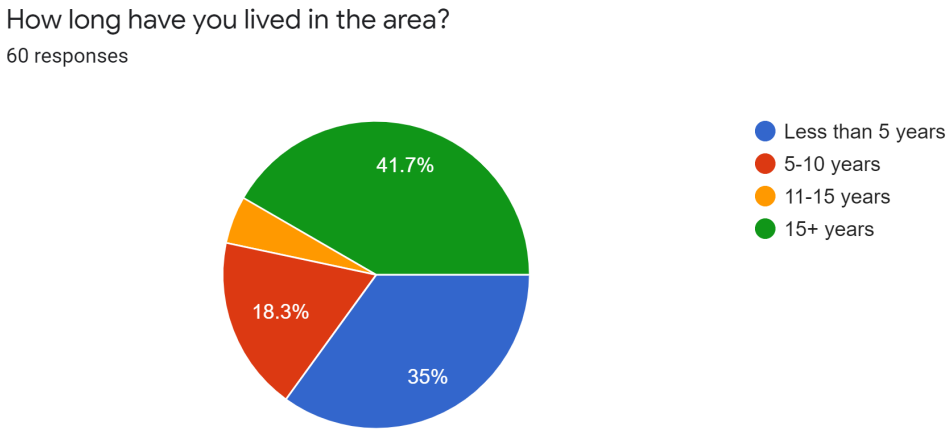

Figure 1. Proportions of how long survey respondents have lived in the Metro Atlanta area.

General Questions

To gain an understanding of the respondents' experience with the style of video that was used in the survey, two of the nine Likert scale questions focused on this topic and were asked before the Likert scale questions related to coyotes. These questions were not repeated after the video and no significance test will be performed with the data collected, but it is important to report any data collected. The two questions read, “I enjoy watching vlog-style videos which include short videos regularly posted by a specific person”, and “I regularly watch videos on YouTube for either entertainment or education.” The average score for the first question was 3.07 and the average for the second question was 3.32. Below the figures visually express the ratios for how each question scored. These questions provided an idea of how familiar the respondents may be with these style videos.

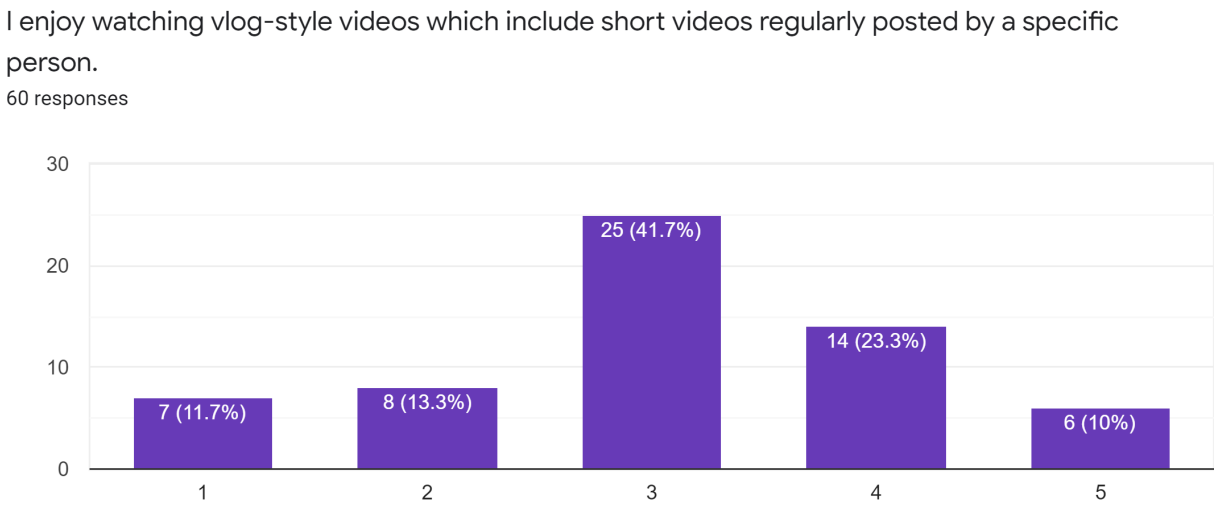

Figure 2. General Likert scale question one results.

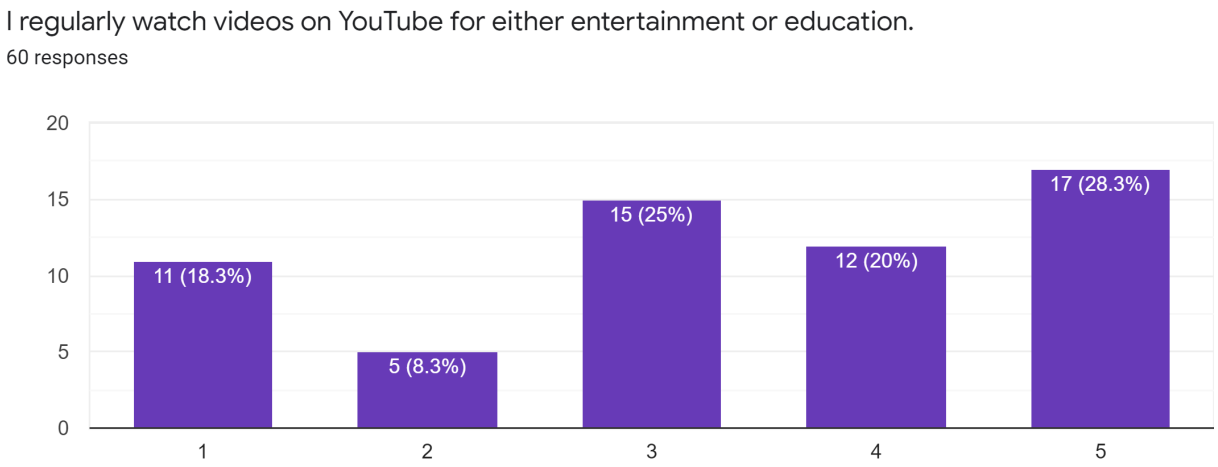

Figure 3. General Likert scale question two results.

Attitude, Perception, Knowledge Questions

The remaining seven Likert scale questions focused on the respondents' attitudes, perceptions and knowledge of coyotes. Of these questions, one would be considered neutral

toned, two negatively worded and four positively voiced. These same questions were repeated in a different and random order after watching the video. Using the responses for before and after the video for each question, a paired sample t-test was performed for each item. The questions included:

1. Coyotes are wild animals and should be treated as such.
2. Hunting and killing is an ineffective way to manage coyote populations.
3. If I can understand coyote behavior, I can be proactive about preventing conflict with them.
4. It is easy to learn how to coexist with coyotes.
5. I do not fear coyotes, because they know to keep their distance from humans.
6. Coyotes pose a threat to the public.
7. Coyotes are important for maintaining the health of our surrounding ecosystems by maintaining rodent populations.

For question one, the results from the pre-video survey (M=4.78, SD=0.64) and the post-video survey (M=4.83, SD=0.61) showed no statistically significant difference in response score; t(60)=0.66, p=0.05. As for question two, there was not a statistically significant difference in the response score between the pre-video survey (M=4.27, SD=1.10) and post-video survey (M=4.02, SD=1.55); t(60)=0.31, p=0.05. Question three also indicated no statistically significant difference in the responses score between the pre-video survey (M=4.77, SD=0.46) and the post-video survey (M=4.9, SD=0.35); t(60)=0.08, p=0.05. The results from the pre-video survey (M=4.22, SD=0.85) and the post-video survey (M=4.75, SD=0.60) did show a statistically significant difference in response score for question four; t(60)=0.00012, p=0.05. For question five, the results from the pre-video survey (M=3.85, SD=1.23) and the post-video survey (M=4.18, SD=1.20) showed no statistically significant difference in response score; t(60)=0.12, p=0.05. There was not a statistically significant difference in response score between the pre-video survey (M=1.77, SD=0.81) and the post-video survey (M=1.52, SD=0.75) for question 6; t(60)=0.08, p=0.05. Lastly, there was a statistically significant difference in the response score between the pre-video survey (M=4.40, SD=0.85) and the post-video survey (M=4.72, SD=0.74); t(60)=0.03, p=0.05).

Question Number	Average Before Video	Average After Video	St. Dev. Before Video	St. Dev. After Video	T-test P-value
1	4.78	4.83	0.64	0.61	0.66
2	4.27	4.02	1.1	1.55	0.31
3	4.77	4.9	0.46	0.35	0.08
*4	4.22	4.75	0.85	0.6	0.00012
5	3.85	4.18	1.23	1.2	0.12
6	1.77	1.52	0.81	0.75	0.08
*7	4.4	4.72	0.85	0.74	0.03

Table 1. Likert scale questions data analysis results.

Two of the seven Likert scale question response scores are statistically significant prompting the decision to reject the null hypothesis. This would support the prediction that how viewers perceive coyotes before watching will be different from the results after watching the video. However, five out of the seven Likert scale question response scores are statistically insignificant. The decision is to fail to reject the null hypothesis suggesting that there is no difference in how viewers perceive coyotes before watching the video and after.

Discussion:

This study is a first look at how video style can impact someone's attitude, perception and knowledge of local wildlife; in this case, coyotes. In particular, it investigated the impact of an educational vlog-style video on people's perception of coyotes in the Atlanta Metropolitan Area. While our future generation continues to find a majority of their information on social media and similar platforms, it is increasingly important to determine how it might impact particular conservation issues. Honestly, this topic could go beyond conservation issues, because we have only just entered this era and we know so little about the impacts it will have on the world. As Dearolph discussed in "Vlogging the Museum", the effects social media has in educational settings has not been studied or discussed enough (2014). There is a lot more to learn. Research has shown that social influence can be a very effective way of creating change (Abrahamse & Steg, 2013). It is this idea that social media can have a huge impact on conservation with the help of leaders in the area who already have a decent following. This idea is what sparks some hope, I think.

The video style studied here was a vlog-style video created, written, and filmed by me. The video was designed to keep the viewer engaged based on previous research. In a comparison study titled, “Vlogging the Museum: YouTube as a tool for Audience Engagement,” researchers took a look at how three different institutions with YouTube channels that present different styles of videos retained their audience's engagement (Dearolph, 2014). Dearolph discovered that the channel with consistently light and humorous tones had a better audience engagement. When Dzara (2020) and colleagues compared qualities in different video styles, they determined that YouTube videos were the most versatile. It is clear that modern educational vlog-style videos still ensure all the necessary qualities. In the video used in this study, I did my best to keep in line with how Dearolph described the videos that had the most success. The video provides the audience with coyote ecology and history as well as informative actions one can take live alongside coyotes.

Based on the results of the survey, there is nothing too significant about the effectiveness of this video on how people perceive coyotes. As mentioned in the results section, two of the seven Likert scale questions were determined to be statistically significant which means that the null hypothesis is rejected and there is a significant difference in the response scores for those questions. Looking at Table 1, the questions that turned out to be significant have an asterisk next to them. Those two questions are number four: “It is easy to learn how to coexist with coyotes” and number seven: “Coyotes are important for maintaining the health of our surrounding ecosystems by maintaining rodent populations”. The most compelling of those being question number four; It is easy to learn how to coexist with coyotes. The mean response score after watching the video was higher than the mean response score before watching it. The lower the score, the more you disagree with the statement. This means the video could have had some slight impact on how people feel they can learn to coexist. This study was not perfect, but has a lot of potential to provide important information on a subject that very little is known. The results for question four provide enough information to prompt more curiosity and wonder about the impacts this style of video can have in education if it were utilized more.

To build on this study, it would be beneficial to do a comparison group study in which two different audiences would watch two different videos and answer surveys based on those videos. This would provide a better understanding and comparison between styles of video and

their impacts. Some limitations of this study would be response bias, time and video production The survey ended up being sent out to zoo members, volunteers, and employees. These are people who already have an abundant amount of animal knowledge, not necessarily about coyotes. This could have created bias in the responses since they are like minded individuals. Data collection started in early October and ended in mid November, which with the help of the education department at Zoo Atlanta and social media, I thought would be enough time to get at least 100 responses. However, if more time is allotted this study could totally be redone with a more indepth and detailed survey as well. Since starting this project and working with the education department, the hope is to refilm the video with the multi-media department at Zoo Atlanta which will also make the video production more professional (but still vlog-style!).

Conclusions:

To reiterate, video media continues to impact our daily lives and it is important to understand these impacts. The goal of this study was to gain an understanding of how to use technology to remain relevant to a new generation of students while engaging them in an interactive learning process such as an educational video. Based on previous research, vlog-style videos seem to get the most engagement and if that is the case, why not make them educational? (Dearolph, 2014). Based on this research, there is not enough evidence to say that video style has an impact on people's perceptions of coyotes. However, one question keeps me asking more. Do people feel like they can learn to coexist with coyotes? Is that the limiting factor? How can the video reach more people?

In the next year, I hope to rebuild this survey, refilm the video with the multi-media department at Zoo Atlanta and reach out to other institutions about the survey and the video. I believe this study has the potential to provide really important information that could change how we utilize videos in education. The educational vlog-style video used in this study was designed to keep the viewer engaged, interested and entertained all while learning about some ecology and history of coyotes and how to live with them. So, it is easy to learn to coexist with coyotes.

Literature Cited:

Abrahamse, W., & Steg, L. (2013). Social influence approaches to encourage resource conservation: A meta-analysis. Global Environmental Change, 23(6), 1773–1785. https://doi.org/10.1016/j.gloenvcha.2013.07.029

Bohling, J. H., Dellinger, J., McVey, J. M., Cobb, D. T., Moorman, C. E., & Waits, L. P. (2016). Describing a developing hybrid zone between red wolves and coyotes in eastern North Carolina, USA. Evolutionary Applications, 9(6), 791–804. https://doi.org/10.1111/eva.12388

Cole, C. (2016). The Impact of Environmental Outreach on Individual Conservation Behaviors. https://docs.google.com/document/d/1DdXiXnTS6xcN6ZX5qW2MHS4PlzZfFmHChVI2JFErRhA/edit?usp=sharing

Dearolph, A. (2014). Vlogging the Musuem: Youtube as a Tool for Audience Engagement.

Etheredge, C. (2013). TigerPrints ECOLOGY AND IMPACTS OF COYOTES (CANIS LATRANS) IN THE SOUTHEASTERN UNITED STATES Recommended Citation. https://tigerprints.clemson.edu/all_dissertations

Hooper, J. W., Gaudin, T. J., & Wilson, T. P. (2016). AN ANALYSIS OF THE HUMAN-COYOTE RELATIONSHIP IN METROPOLITAN ATLANTA, GA.

Kyle Brewster, R., Henke, S. E., Turner, B. L., Tomeček, J. M., & Ortega-S, A. (2019). Cost-benefit analysis of coyote removal as a management option in Texas Cattle ranching. Human-Wildlife Interactions, 13(3), 400–422. https://doi.org/10.26077/2hd9-1v35

Larson, R. N., Brown, J. L., Karels, T., & Riley, S. P. D. (2020). Effects of urbanization on resource use and individual specialization in coyotes (Canis latrans) in southern California. PLoS ONE, 15(2), 1–23. https://doi.org/10.1371/journal.pone.0228881

Lehner, P. N. (1976). Coyote Behavior: Implications for Management. Wildlife Society Bulletin, 4(3), 120–126.

Mayer, F. S., & Frantz, C. M. P. (2004). The connectedness to nature scale: A measure of individuals' feeling in community with nature. Journal of Environmental Psychology, 24(4), 503–515. https://doi.org/10.1016/j.jenvp.2004.10.001

Stroud, H. B., Kilmer, M. K., & Naturalist, T. U. (2018). Urban Naturalist 2018. 19.

Young, J. K., Draper, J., & Breck, S. (2019). Mind the gap: Experimental tests to improve efficacy of fladry for nonlethal management of coyotes. Wildlife Society Bulletin, 43(2), 265–271. https://doi.org/10.1002/wsb.970

https://www.census.gov/quickfacts/atlantacitygeorgia

Appendix:

https://forms.gle/LEfNJvYXUEQDERTq5

https://www.youtube.com/watch?v=5EdKqjDiemI&t=50s