The Impact of Content Creation Strategies on Engagement With Trending YouTube Videos: An Analysis of Video Style and Thumbnail Customization

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1   Introduction

Over 1.9 billion users visit YouTube each month generating billions of views, according to YouTube (YouTube, 2019). The number of channels earning six figures per year on YouTube grew by more than 40 percent from 2018. With a wide, growing audience and increasing opportunity to make profits, the incentive to promote and create popular content is clear. Enter the YouTube trending page.

This list of 200 trending videos is updated every 15 minutes by YouTube and aims to surface videos that, according to YouTube (YouTube, 2019), appeal to a wide range of viewers, are not misleading or sensational, showcase a diversity of creators, and are surprising or novel. The trending list considers many metrics including: views, age of the video, how quickly the video is gaining views, and where views are coming from.

While YouTube gives vague guidelines as to how the trending list is determined, it does not provide insight into what style and strategies creators should use to achieve trending status. With more than 500 hours of content uploaded every minute (Statista, 2019), creators have developed many methods to make their videos to stand out, like creating customized thumbnails and creating/promoting their own unique styles of videos not recognized by YouTube, like challenge and unboxing videos. As these methods have not been heavily studied, our team analyzed YouTube's top 200 trending videos to determine what video styles, thumbnail styles, and durations were most common and whether these methods were related to views and levels of engagement.

2   Research Questions and Hypotheses

Research Questions

1. Do different styles of trending YouTube videos get different levels of engagement?

2. Do trending YouTube videos with customized thumbnails get higher views and engagement than videos with less customized thumbnails?

3. Does the duration of a video have an impact on the trending rank or user engagement?

Hypotheses

We hypothesize that vlog style videos will have the lowest view to engagement ratio signifying the highest engagement.

We also hypothesize that videos with more customized thumbnails will have more views and higher levels of engagement compared to videos with no thumbnail customization.

Finally, we hypothesize that videos with durations over 10 minutes will rank higher in trending lists and have more engagement than videos with durations under 10 minutes.

3   Methods

We used the YouTube API and Python to pull all relevant data to a CSV file. We used the "Most Popular" YouTube chart and requested the top 200 videos. We used the snippet, statistics, and content details sections to request the following information:

Rank, Link, video_id, title, publishedAt, channelId, channelTitle, categoryId, CategoryName, trending_date, duration, tags, view_count, live_broadcast_content, likes, dislikes, comment_count, thumbnail_link, comments_disabled, ratings_disabled, definition, caption_tf, licensedContent_tf, description

We then checked this information against the [trending videos](#) at that second to confirm our data collection was accurate. Any videos with no stats were removed as they are typically either deleted videos that no longer show on the trending page and are therefore irrelevant for our analysis. The data was pulled at 13:35 on 10/04/19 and took less than one minute. This data was written to a CSV file that was imported into Google Sheets, Excel, and R for analysis. We created an engagement score – defined by the ratio of views to engagement, shown below. Lower ratios indicate more engagement.This score is also referred to as the view to engagement ratio.

$$\frac{views}{likes + dislikes + comments}$$

Video Style

Each video was manually coded and assigned a style based on the categories below. For some categories, like comedy skit and interview, specific features of the video style were specified as to maintain mutual exclusivity among categories. Coding had an inter-coder reliability score of 0.82.

1. Music video
2. Comedy Skit (human, scripted)
3. Compilation (highlight reels, best of, Vine)
4. Interview (unscripted responses, two or more people)
5. Gaming
6. Challenge video
7. Trailers
8. Instructional/how-to/educational
9. Unboxing/reviews
10. Vlog
11. News
12. Other

In Excel, our team sorted the top 200 videos by style and found the average views, likes, dislikes, and comments for each style. We then found the view to engagement ratio for each video style defined as average views divided by the sum of average likes, dislikes, and comments.

Thumbnail

The thumbnail of each video was coded and given a "customization score" based on the level of apparent customization. The thumbnails were coded according to the following scale:

1 – no customization, default thumbnail

2 – some customization

3 – advanced customization

A score of 1 indicated that a thumbnail appeared to be the default option suggested by YouTube or the thumbnail was a still, unedited photo from the video. A score of 2 indicated that the YouTuber created a thumbnail instead of using a default, and there was some level of customization, for example, a title or logo overlaying an image. A score of 3 indicated that there was a high level of customization meaning the thumbnail was created using Photoshop, text, and/or icons in a unique way. See Appendix for examples of each category of thumbnail.

The 200 coded videos were analyzed in Excel to investigate if/how custom thumbnails were related to velocity of views and levels of engagement. View velocity was measured by the average views per hour (total views at the time data was pulled, divided by the hours elapsed since publishing) for videos in each thumbnail customization category.

To compare engagement of videos in each thumbnail customization category, we compared their engagement scores.

Duration

Duration data was pulled from the YouTube API in ISO8601 format. The video duration data was then converted in Excel to minutes. Our team categorized videos as ten minutes or less or more than 10 minutes. We chose 10 minutes since once a video reaches 10 minutes or longer in duration, YouTube allows for content creators to insert advertisements into the middle of their videos (YouTube, 2019). Duration data was then analyzed in Excel and Tableau to find averages and P values.

4   Results

Do different styles of trending YouTube videos get different levels of engagement?

As shown with a red bar in figure one below, 27.87 is the overall engagement ratio from the top 200 trending videos analyzed. This means on average, for every 28 views there was one engagement. For the video styles analyzed below, anything less than the average engagement ratio of 27.87 signifies higher-than-average engagement and anything higher than 27.87 equates to lower-than-average engagement.
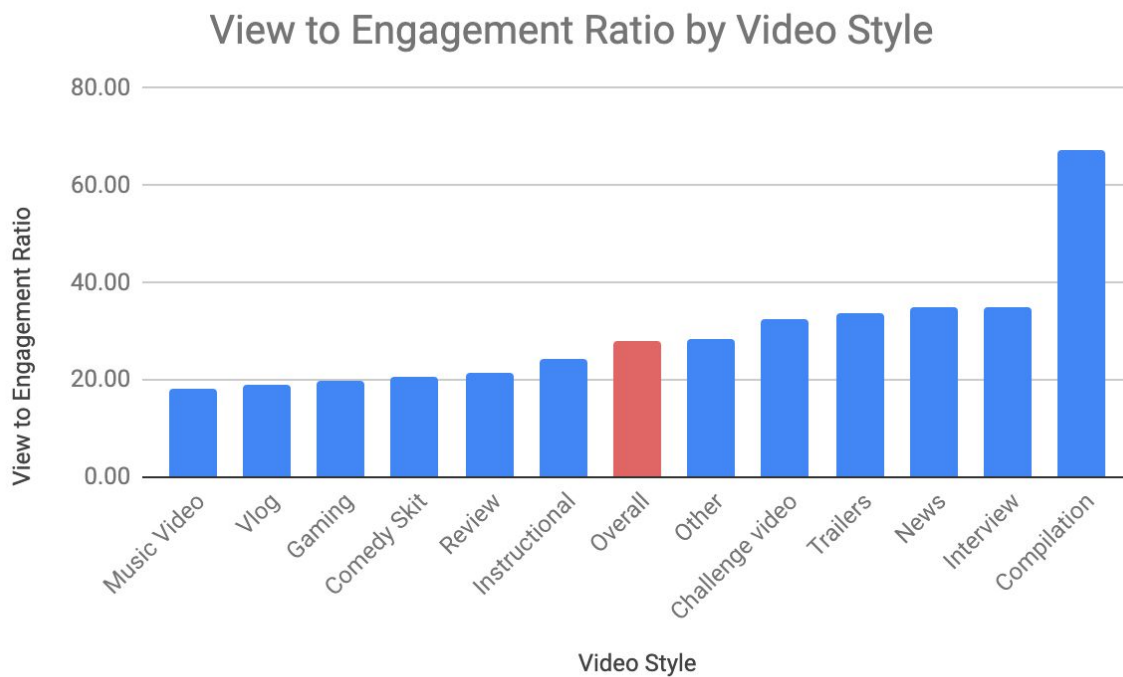

Figure 1

In terms of general engagement trends, all video styles had many more likes than dislikes. The top 200 trending videos had an average view count of 1,944,333. The video styles, number of videos in each category, and engagement score by video style are shown in table 1 below.

Video Style	Number of Videos	Engagement Score
Music Video	24	18.38
Vlog	41	18.88
Gaming	3	19.93
Comedy Skit	15	20.69
Unboxing / Review	8	21.41
Instructional/how-to	28	24.27
Other	16	28.38
Challenge video	9	32.33
Trailers	17	33.83
News	7	35.09
Interview	18	35.15
Compilation	14	67.09

Table 1

Music videos comprised 24 of the top 200 videos and had the highest engagement of any video style with an engagement score of 18.38, well below the average of 27.87.

Vlog style videos, of which there were 41, had the second highest engagement of all video styles with an engagement score of 18.88.

We coded three videos as gaming style videos from the top 200 trending list. Gaming videos had an engagement score of 19.93. Gaming videos had the third highest engagement.

Fifteen comedy skit videos had an average engagement score of 20.69.

The video style of unboxing/review had an engagement score of 21.41. There were eight videos in this style.

The instructional/how-to video style had an average engagement score of 24.27, and there were 28 videos in this category.

Sixteen videos did not fit into any of the 11 categories so they were categorized as "other." Examples of these videos include an animated film theory video about Avatar and the science of waterbending and a video showing a KPop star making a flower arrangement in silence for 2 minutes. This category had an engagement score of 28.38. This is just higher than the average view to engagement ratio overall, signifying lower than average engagement.

We coded nine videos as challenge style videos. Challenge videos had an engagement score of 32.33 – just higher than the average engagement for all 200 trending videos.

The video style of trailers, of which there were 17, had an engagement score 33.83.

The video style of news had a high ratio of views to engagement, and an average engagement score of 35.09, There were seven videos in this category.

There were 18 interview style videos. These videos had the second highest engagement score 35.15 signifying one of the lowest engagement ratios of all video styles.
The video style of compilation, comprised of 14 videos, had by far the highest view engagement ratio of 67.09 meaning the lowest engagement of all video styles.

Do videos with different types of thumbnails generate different types of engagement?

Almost half of the 200 trending videos analyzed had a thumbnail that was highly customized, meaning a score of 3. Sixty-six videos had a thumbnail customization (TC) score of 2, and only 41 videos had default thumbnails, meaning a TC score of 1. This indicates that most creators have chosen to create some level of customized thumbnail instead of using a default image suggested by YouTube. However, analysis of view velocity and engagement ratio showed no

significant difference in view velocity or engagement between videos with more customized thumbnails compared to videos with default thumbnails.

Thumbnail Customization Score	# of videos	Average View to Engagement Ratio (:1)	Average Views/Hour
1	41	22.03	25,332.13
2	66	29.62	41,912.44
3	93	29.21	27,398.60
Overall	200	27.87	31,764.54

Table 2

View Velocity

Videos with a TC score of 2 had the highest view velocity with an average of 41,912.44 views per hour. Videos with a TC score of 3 had an average of 27,398.60 views/hour and videos with a TC score of 1 had an average of 25,332.13 views per hour.

Engagement

As shown in Figure 2, there was no significant difference in engagement based on thumbnail customization. Videos with a TC score of 1 had the lowest average view to engagement ratio of 22.03, indicating more engagement than those with TC scores of 2 and 3. While there has been heavy focus on creating custom and unique thumbnails in order to increase views and engagement, it does not appear to be a significant factor.
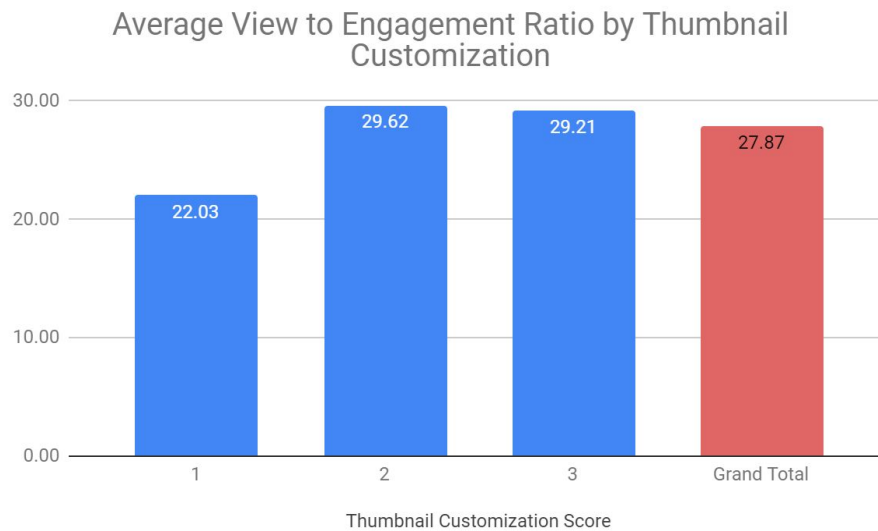
Average View to Engagement Ratio by Thumbnail Customization

Figure 2

Does the duration of a video have an impact on the trending rank or user engagement?

The median duration of all videos was 11 minutes and three seconds. Duration of videos had no significant impact on the rank of videos with a p-value of 0.586.

Duration of videos also did not have a statistically significant impact on engagement with a p-value of 0.148. Though no statistically significant relationship was shown, our team noted a general trend that, as videos lengthen, the engagement to view ratio decreases, meaning that a higher number of users engage with videos when they are longer.

Engagement Score vs Duration (Minutes)
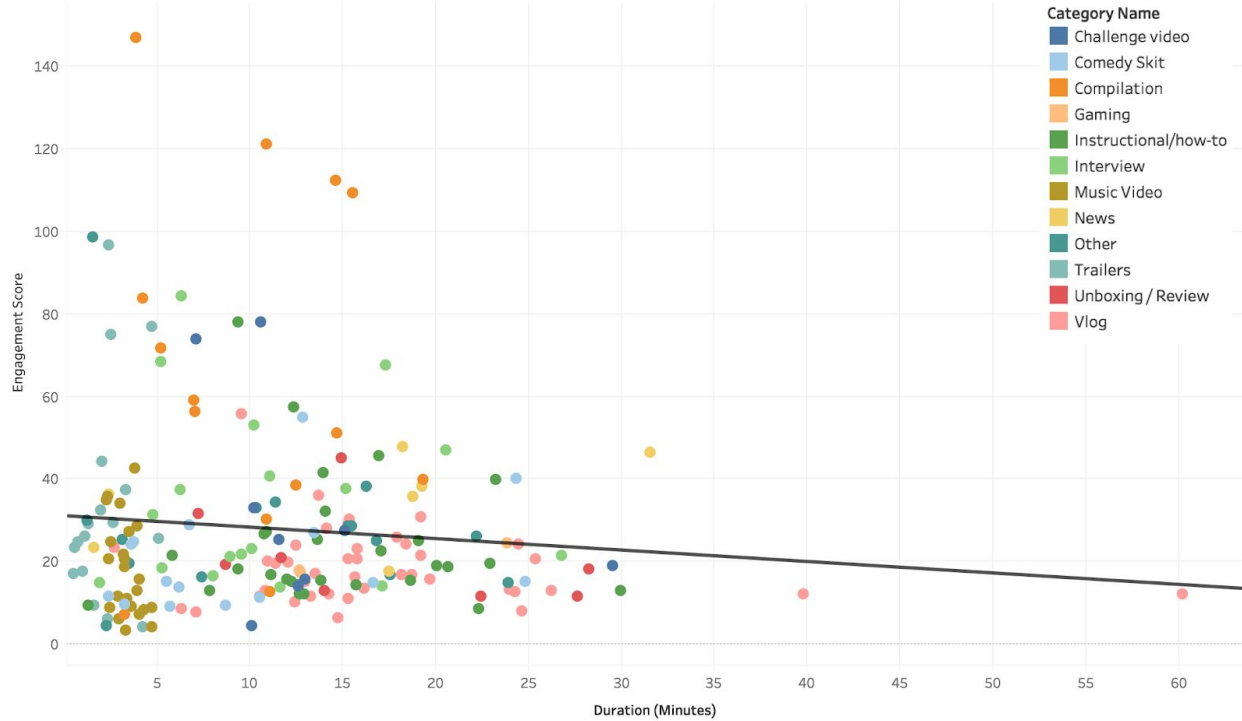
Of the 200 videos sampled, 115 were 10 minutes in duration or longer with the median duration of all videos being 11 minutes and 4.8 seconds. Videos under 10 minutes also had 1.73 times as many views compared to longer videos. As the view to engagement ratio of videos over 10 minutes was lower than those in less than 10 minutes, the data suggests that audiences are more likely to engage with longer videos.

Video Duration	Median Rank	Average Views	Average Engagement Score
Less than 10 min	97	2,564,061.92	29.61
Greater (or equal) to 10 min	105	1,486,272.94	26.59

Table 3

5   Discussion

In attempts to capture a large audience on YouTube by reaching trending status, creators have developed many strategies to make their videos to stand out. These include creating customized thumbnails, creating/promoting specific styles of video, and optimizing video duration. However, the impact on engagement of these methods have not been heavily studied. This research analyzed YouTube's top 200 trending videos to determine whether there was a strong relationship between video styles, thumbnail customization, and durations and levels of engagement. Our research attempts to provide YouTubers with information to inform content creation strategies for achieving trending status.

Video Style

The results partially supported our hypothesis that vlog style videos would have the highest engagement. Analysis showed that this style of video had the second highest engagement, second only to music video. The difference in the engagement score between the two categories, however, was almost negligible at 0.5 views. Because the average content creator is unlikely to produce a music video style video, we shifted our focus away from music videos as the other styles are more pertinent to the average content creator on YouTube.

Three of the top five most engaged with video styles – vlog, review, and instructional/how-to – are often characterized by the content creator speaking directly to the audience by bringing the audience into the creator's life or teaching them how to do something.

One possible explanation for the high engagement with these video styles is that they encourage the formation of parasocial relationships, making viewers feel more connected to the creator and promoting engagement. A study in the Journal of Social Media in Society that focused on the attitudes surrounding the formation of a parasocial relationships with celebrity influences on YouTube found that, "participants reported feelings of knowing and familiarity with speakers," and that, "YouTube celebrities were viewed as credible sources who were trustworthy," (Rasmussen, 2018). It is possible that these video styles, especially vlog style videos as indicated by the second lowest view to engagement ratio, help facilitate strong relationships through parasocial interaction. As suggested by the above average engagement numbers, there is power in parasocial relationships. YouTube videos in which creators form this type of connection with the audience are some of the most engaged with trending video styles.

It is also worth noting the other end of the spectrum – the least engaged with video style – compilation. This style had an engagement score of 67.09, almost double the next worst category. This poor engagement score could be due to the viewing style often associated with

videos in this category. Viewers may be more likely to watch compilation-type videos on smart TVs that do not offer many options for easy engagement. In addition, compilations are often long videos that users don't give their full attention or engagement to.

Thumbnail Customization

The results did not support our hypothesis that videos with customized thumbnails would have higher levels of engagement than videos with no thumbnail customization.

Though the majority of the trending videos analyzed had some level of thumbnail customization, no significant relationship was found between thumbnail customization and view velocity or video engagement. Our results contradict the widely-held belief in the creative space that thumbnail customization is an important strategy for getting views and engagement. Further analysis is necessary to determine whether this is also true outside of the top 200 trending list.

One possible explanation for our findings is the recent addition of YouTube's hover feature on video thumbnails. When users place their mouse over the thumbnail, the thumbnail disappears and a muted clip from the video plays. This feature gives users a preview of what the video looks like before they decide whether to click on and view the video. This new feature could be one explanation for a decreased significance of custom thumbnails. In addition, thumbnails that go to extreme levels of customization are often seen as clickbait by potential viewers and are therefore not engaged with.

Duration

Our results partially supported our hypothesis that videos over 10 minutes in length would rank higher in trending lists and have more engagement than videos under 10 minutes. While videos ranked higher on the trending list were slightly longer than those ranked lower, there was no statistically significant difference or trend. There was also no significant correlation between video engagement and duration.

This was surprising, as our team expected YouTube's algorithm to promote longer videos with more time for advertisements and more opportunity to keep audiences on YouTube for long periods of time. Additionally, YouTube allows creators to insert advertisements into videos that are longer than 10 minutes.

The YouTube trending list is comprised of diverse, often niche, content types from a variety of content creators. One possible explanation for our results related to duration is that the trending list does not paint a realistic picture of the content users regularly engage with on YouTube as a whole and thus does not follow expected trends of duration and engagement. In addition, several

of the top trending videos under 10 minutes were trailers for big-ticket movies and music videos from superstar musicians that the average YouTuber cannot create, so this data may be skewed.

Opportunities for Further Analysis

In future investigation, it would be interesting to look further into the relationship between personalized styles of videos that lead to the development of parasocial relationships and video engagement.

Relating to our investigation of thumbnail customization, it would be interesting to ask YouTube users about their use of and attitudes toward the hover feature on videos to draw conclusions as to if this new feature has impacted the importance of customized thumbnails.

References

Manage ad Breaks in long Videos. (n.d.). Retrieved October 25, 2019 from
https://support.google.com/youtube/answer/6175006?hl=en

Rasmussen, L. (2018). Parasocial Interaction in the Digital Age: An Examination of Relationship
Building and the Effectiveness of YouTube Celebrities. The Journal of Social Media in
Society, 7(1), 280-294. Retrieved from
https://thejsms.org/tsmri/index.php/TSMRI/article/view/364

Trending on YouTube - YouTube Help. (n.d.). Retrieved October 22, 2019, from

https://support.google.com/youtube/answer/7239739?hl=en.

YouTube for Press. (n.d.). Retrieved October 23, 2019, from

https://www.youtube.com/intl/en-GB/about/press/.

YouTube: hours of video uploaded every minute 2019. (2019, May). Retrieved October 24,
2019,

from https://www.statista.com/statistics/259477/hours-of-video-uploaded-to-youtube-ev

ery-minute/.

Appendix

Thumbnail Score 1
"I Made a Train for my Dogs" - JennaMarbles

Thumbnail Score 2
"WE ARE PREGNANT + TWIN GENDER REVEAL" - SUPEReeeGO

Thumbnail Score 3
"The Beautiful World of Jeffree Star" - shane