Understanding Blind or Visually Impaired People on YouTube through Qualitative Analysis of Videos

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Abstract

In this paper, we analyzed videos to explore blind or visually impaired (BVI) people on YouTube. While researchers found how BVI people interact with contents and other people on social media platforms (e.g., Facebook), little is known about the experience of BVI people on video-based social media platforms (e.g., YouTube). To use videos as a mean of identifying the needs of BVI people on YouTube, we collected and analyzed a specific type of video called Visually Impaired People (VIP) Tag video. This Tag video has a set of structured questions about eye condition and experience as a BVI person. Based on the qualitative analysis of 24 VIP Tag videos created by BVI people, we found how they create videos and why they joined YouTube. In conclusion, we present how video-content analysis can be used to create an inclusive video-based social media platform.

Author Keywords

YouTube; blind; visually impaired; video; accessibility.

Categories and Subject Descriptors

• Human-centered computing~Collaborative and social computing systems and tools   • Human-centered computing~Interaction design.
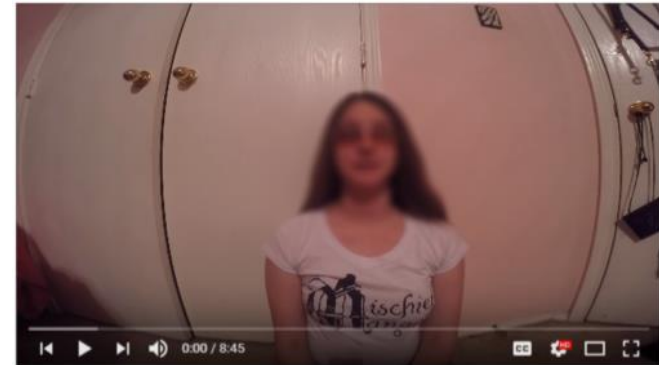
VIP Tag Video Questions

1. What medical condition caused you to be blind or visually impaired?

2. In three words, describe your vision.

3. What is the hardest thing to do being blind or visually impaired?

4. What is the best part about being blind or visually impaired?

5. What question do you get asked most about or because of your vision?

6. Do you have a cane, a guide dog, or neither?

7. What one piece of advice would you give to someone who is losing, going to lose, or has lost their vision?

8. What is on piece of advice you would you give to a sighted person about interacting with a person who is blind or visually impaired?

Introduction

Along with the growth of camera technology, video has become a trending medium on social media platforms. Facebook added a new section specifically for video content while YouTube has become the largest video platform with 1.32 billion users [10]. Each day those YouTube users watch a billion hours of video and generate billions of views [10]. Instead of text-only description, people began to share their stories and experiences through videos.

With its increasing popularity, videos are often used as a source of research data. Researchers have leveraged videos to understand target populations when interacting with media. They collected and analyzed videos created by people with various backgrounds, such as people with chronic diseases, disabilities, or anorexia [1, 2, 3, 7]. In addition to interviews and focus groups, videos offer supplementary information about the target group. On the other hand, some researchers aimed to understand and improve the experiences of BVI people on social media platforms, such as Facebook and Twitter [4, 8, 9]. While these studies focused on text-based or picture-based contents, a recent study revealed that BVI people upload their videos and connected with other people through videos on YouTube [6].

Nevertheless, little is known about the video experiences of BVI people and their motivation for using video-based social media platforms (e.g., YouTube). To address the gap, we collected and analyzed a specific type of video that they created, VIP Tag videos. The goal of our research is to create inclusive video-based social media platforms by

Figure 1: The creator of Visually Impaired People Tag is explaining about the Tag video and the ten questions.

analyzing video contents posted by BVI people on YouTube. This study aims to understand BVI people on YouTube by answering the following questions:

RQ1: What contents do BVI people create on YouTube?
RQ2: How do BVI people create videos?
RQ3: Why do BVI people upload videos?

In particular, we present an additional method to identify the needs of BVI people and to improve their video experiences. In the next sections, we describe the characteristics of video data and present methods to collect and analyze the data. We then demonstrate the findings on different aspects of BVI people and their videos on YouTube. The conclusion section is followed by presenting the contribution of this study and future studies to support BVI people on video-based social media platforms.

Keyword Search

+

Related Videos

+

Tagged Vloggers

24 videos

Figure 2: We collected 24 Visually Impaired People (VIP) Tag videos from YouTube.

Video Sample

A VIP Tag video contains the responses of a video blogger (i.e., vlogger) to the structured ten questions about their eye condition and experience as a BVI person (see Sidebar). It was initially created by a visually impaired vlogger in 2015 (see Figure 1). In the video, the vlogger answers them while sharing his or her experience with the audience. At the end of the video, the vlogger should mention or tag three other vloggers to do the same Tag video. Among various types of Tag videos, VIP Tag videos encourage BVI vloggers to introduce themselves to the audience on video-based platform since the questions help them share their stories one at a time. We decided to analyze VIP Tag videos since we could confirm that the vloggers who created the videos are all blind or visually impaired. In addition, one of the question about joining YouTube overlaps with our research question.

Method

To identify VIP Tag videos on YouTube, we used the keywords ("visually impaired" OR "vip") AND ("tag"). We then collected the VIP Tag Videos that contain "visually impaired" or "VIP" in title. When we found first several VIP Tag videos, we tracked the tagged vloggers to find more VIP Tag videos. We also found additional videos from the list of the related videos which was shown next to each VIP Tag video. Overall, we collected 24 videos created individual BVI person (see Figure 2). From each video, we collected the meta-data, including the number of views, length of the video, and video effects. In this paper, we define video effects as any extra features applied to raw videos (i.e. background music). To analyze qualitative data, we transcribed videos and collected statements describing experiences
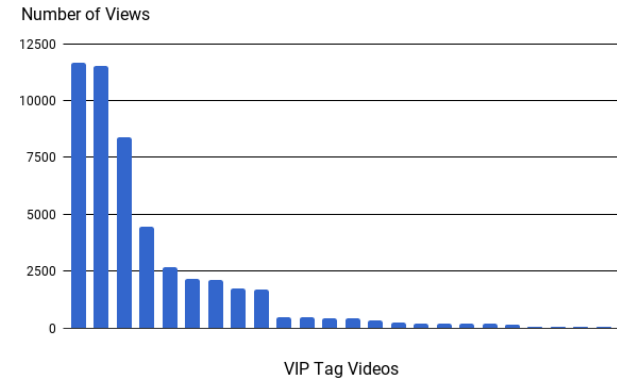
Number of Views

Figure 3: Only some of the videos are popular with high number of views. The highest number of views is 11,659 while the lowest one is 46.

of participants on YouTube. We used an open coding technique [5] by reviewing transcripts and highlighting excerpts. After each researcher coded the half of the statements, both researchers conducted an affinity diagramming session to identify key insights, themes, and patterns that occurred in the data repeatedly.

Findings

The collected 24 videos were uploaded by individual BVI people on YouTube between June 2015 and March 2017. The average length of the videos was 13 min 27 sec (SD: 6 min 44 sec). The average number of views was 2,076 (SD: 3,476). This high standard deviation of the number of views indicates that only a few videos are popular while some are not, though all of the videos have a similar content structure (see Figure 3). Based on the analysis of the videos, we identified three themes which correspond to the research questions.

What contents do BVI people create on YouTube?
We found that a type of content that BVI people create is the description of themselves and their experiences. BVI vloggers shared their current eye conditions in their videos. They explained how they became blind or visually impaired and what they can do in daily life. In addition, they also shared their best experience as a BVI person. For example, they do not judge others by the appearance. Instead, they focus more on the personality: *"I'm not constantly thinking about someone's looks or their appearance or how they dress. I'm thinking about their personality." (P11)*

Some of them described that they can be themselves and do anything they want since they do not worry about reactions from other people. Being humble and meeting other BVI people are also good experiences that they had as BVI people*: "I would say getting to see how I overcome challenges and also getting to meet others that are visually impaired and getting to learn from them and just getting to experience life a little different." (P8)*

On the other hand, they also shared their experience with activities that are hard to be done as a BVI person. For example, while they manage to complete in the end, daily chores such as brushing teeth, putting up makeup, and vacuuming take them longer time than people with vision: *"I can do them [daily chores], it just takes me a lot longer to do." (P12)*

Moreover, many of them pointed out that there are difficulty in communication. It is hard to explain their vision whenever they talk to new people. Even in a conversation, they cannot read non-verbal communication, such as body language, facial expression or eye contact, so that they lose so much information: *"I can't always judge their expressions or the looks in their eyes to always accurately gauge how they're feeling." (P25)*

Furthermore, many BVI vloggers are struggling against many social issues. They are trying hard to overcome the stereotypes of BVI people, to find alternative accessible way in daily life, and to live in the society where it does not understand the spectrum of blindness*: "The worst part about being blind or visually impaired is just the lack of open-mindedness in society, and the lack of understanding or awareness about the spectrum of blindness." (P15)*

As shown above, BVI vloggers utilized videos to present themselves. Motivated by the questions of Tag videos, BVI vloggers tend to describe themselves with personal story and experience. Although a Tag video seems to be structured with the set of the same questions, the answers are different as each BVI vlogger has a unique experience and a different perspective.

How do BVI people create videos?
We found that 23 out of 24 videos are recorded with proper orientation. Most BVI vloggers in the videos faced directly into the camera. It is hard to determine how they record the videos unless they mentioned it in their videos like P24 did: *"My husband is taking the video for me and is going to read the questions." (P24)*

On the other hand, only one person, P2, had difficulty in adjusting the camera. Her video was dark and dim so that it was difficult to identify what she was doing. Since she knew this issue, she acknowledged the audience that the video would not be oriented properly:
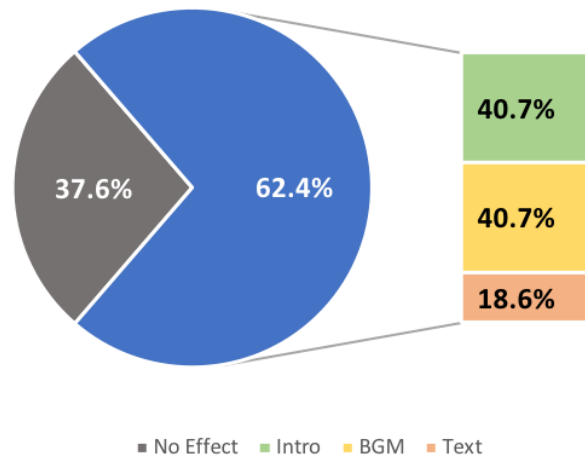
Figure 4: This pie chart shows the percentage of 24 videos with video effects, such as Intro, BGM, and Text decoration.

"First of all, as I say in every video, I am blind and cannot see or adjust it [camera]." (P2)

For video effects, we identified three basic effects that BVI people used: Intro, Background music, and Text decoration. These features are not provided by YouTube, but frequently used in videos. Of 24 videos, 62.4% of the videos had at least one effect (see Figure 4). 40.7% of them had intro and another 40.7% had background music (BGM) while 18.6% of them had text decorations. The use of these additional features demonstrates that BVI people are interested in editing and making their videos more visually appealing.

Why do BVI people join YouTube?
Many BVI people use YouTube to watch videos for entertainment and information. In addition, we found that BVI people joined YouTube due to two important reasons: 1) to support other BVI people and 2) to educate sighted people. First, they wanted to provide social support to those who have similar eye condition. By sharing their daily life and experiences, they tried to make other BVI people feel less alone*: "One person will stumble upon this video and they'll feel less alone. (P17)". "I joined YouTube to share my story. So, others [BVI people] know that they're not alone." (P8)*

In addition, they knew how to support the other BVI people as they already had similar experiences. They were able to understand what other BVI people suffered from and how to help those people*: "The only person who truly understand how their disability affects them is the disabled person themselves." (P25)*

Second, BVI people joined YouTube to overcome stereotypes and educate the community of sighted people. In their VIP Tag videos, BVI people delivered messages that they wanted to create awareness and educate people about blindness and visual impairments*: "I wanted to educate the public on blindness and how just because I can't see or someone else can't see doesn't mean that we can't do things. (P11)". "The big thing is to educate people about blindness awareness [and] what we really can do because right now people think that anybody with a disability is not able to do anything." (P13)*

Although BVI people have difficulties in interacting with video-based social media platforms, they were eager to leverage videos as a medium to support other BVI people and to educate sighted people to correct inappropriate stereotypes of BVI people.

Conclusion

Overall, our research aims to make video-based social media platforms accessible to support BVI people. The primary contribution of this study is to present an approach to understand BVI people on video-based social media platforms. We conducted a qualitative analysis on a specific type of online videos created by BVI people and identified the contents of the videos. This study shows that the method of analyzing the videos created by BVI people could be a supplementary strategy to identify their needs while using video-based social media (e.g., YouTube).

Future work still remains to conduct multiple studies to understand experiences of BVI people when interacting with other people through online videos. While we only focused on analyzing the contents of videos, comments on the videos may provide additional information to understand the interaction between vloggers and viewers. Also, we plan to recruit active BVI vloggers on YouTube and conduct interviews with them to collect additional qualitative data to identify challenges they face when interacting with other people through online videos.

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