An Experimental study: YouTube Streaming and its Impact on the Visually Challenged

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ABSTRACT

The information society has been dramatically changed with the evolution of technology which has radically changed the every spheres of life in the development of economic, socially and culturally. The flow of technological innovation has brought immense change in the human development, were the all the disability aspects of human being have been rendered effectively to normalize the aspects of understanding. The characteristics of you tube streaming has been a mode of systematic programmed development for visually challenged lives have improved significantly. Mixed method approach (experimentation and interview) is been used for the study on how video streaming as a tool for the visually challenged which would connect to multiple intelligences, both hemispheres of the brain, and to the emotional sense of the people. The use of YouTube videos in learning enhance visually challenged people to remember content, grabbing attention, improving attitude towards content and learning. This paper explores the cognitive skills like the process of thinking, the formation of knowledge and the mental operations of the visually challenged.

Keywords: Cognition, Knowledge, Memory, YouTube, Thinking

Introduction

Marshall McLuhan (1911-1980) Canadian scholar ‘The Father of electronic age’ believed and coined the term “global village” were he had optimistic and pessimistic potential developments stemming from the electrification and digitization of media contents and media vehicles. McLuhan posited that technological environment cannot understood from outside were as how the electronic age “works us over” if we “recreate the experience” in depth and mythically, of the processed world of technology. He emphasized we shape our tools and then our tools shape us. The key points of change in how humans have viewed the world and how these views were changed by the adoption of technology. Mishna et al., (2009) observed that the youth today immensely use technology as a methods as a medium of communication and socialization. The modern technological lives are more determined by technologies that allow us to communicate with one another more cheaply, more rapidly and across greater distances.
The potential change of technology and the way we relate to one aspect of our lives that has become more important in our relationship with communication technology. Growth of computer and internet connection one can easily communicate to the world. The Internet has become the second most important distribution channel which has become an enterprise for new avenues for social media. Social media an interactive computer-mediated technology that facilitate the creation or sharing of information, ideas, career interest and other forms of expression via virtual communities and networks. The access of social media services through web based technologies and the increase of communication technology exponentially helps to stay connected with friends, family, colleagues, customers or clients. Social networking sites such as Facebook, Twitter, LinkedIn, Instagram, etc and media sharing sites are (Instagram, YouTube, Snapchat etc).

Youtube.com is the largest user driven video content provider in the world Cheng et al. (2007), it has become a major platform for disseminating multimedia information. YouTube is a key international platform for socially-enabled media diffusion. Today, YouTube is the largest user-driven videos content provider and also socially enabled media in the world. It has become a major platform for disseminating information. The digital access provided the space for the visually challenged enable them to perform everyday tasks easier.

The YouTube plays a prominent space where the visually challenged people access to information search, to endow knowledge, social interaction, entertainment etc. Recent studies also showed that visually challenged people spend their time on streaming videos like YouTube, Netflix and Amazon prime which acts as a platform for socially-enabled media diffusion. YouTube allow users to interact, engage, view, collaborate, and primarily assess their system of communication (Gill, Arlitt, Li, & Mahanti, 2007), with more than a billion users, nearly 33% of Internet populace (YouTube, 2016). It reports that hundreds of millions of hours are spent daily on their platform, and result in billions of views every day.

Burgess and Green (2009) explained that YouTube was one of a number of competing services aiming to remove the technical barriers to the widespread sharing of video online, as it provides a very simple, integrated interface within which users could upload, publish, and view streaming videos without high levels of technical knowledge. As of May 2019, more than 500 hours of video content are uploaded to YouTube every minute.

Generally YouTube allows two major user functions i.e., content creation and content seeking. Content seeking is an intuitive user-action that allows users to browse and search for specific videos for individual gratification. Furthermore technology support of YouTube extends its access through various devices and a platform which prominently contributes the visually challenged people to experience streaming media like others does.
Cognitive skills

Cognition is the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses. It encompasses many aspects of intellectual functions and processes such as attention, the formation of knowledge, memory and working memory, judgment and evaluation, reasoning and computation, problem solving and decision making, comprehension and production of language. People with strong cognitive needs are often described as curious and inquisitive. According to humanistic psychologist Abraham Maslow, all individuals strive to become self-actualized although when cognitive needs are blocked, all of the cognitive needs on the hierarchy are threatened. Different cognitive functions play a role in these cognitive processes: perception, attention, memory, reasoning, decision-making, language, evaluation etc. Each of these cognitive functions work together to integrate the new knowledge and create an interpretation of the world around us (Korcyn, Peretz C, Aharonson V, et al, 2007). Loss of vision can affect all areas of development. For instance, cognitive ability will affect the ability to conceptualise the environment in the absence or reduction of visual information. Indeed, a delay in the cognitive skills can have a direct impact on a child’s social competence (Guralnick, 1992, Guralnick et al., 1996b, Rettig, 1994).

‘Seeing’ through auditory perception:
As we use our eyes to see but it’s the brain that translates the information to make an image, but for the visually challenged the same information translated it into an image in the brain through a different sense. They use auditory information to locate sound sources and sound-reflecting objects (echolocation) to build an image in their minds of the things around them. For the blind individuals, audition provides critical information for interacting with the environment. Thaler et al (2011) also concluded that many visually impaired develop impressive hearing skills that help them navigate in their environment. Whether it is an audio, video or static content the visually challenged perceive everything through audio, touch, smell. There is evidence that vision plays a pivotal role in setting up multisensory functions (Candas, 2005). They access streaming video just like sighted person for communication, information seeking, socialization, cognition etc.

Objectives of the study:

- To identify how streaming videos enhance cognitive skills of visually challenged
- To analyze how YouTube increase knowledge of visually challenged
Theoretical Framework:

**Uses and Gratifications Theory (Blumler & Katz, 1974)**

Uses and Gratifications Theory is a theory rooted in the communication studies literature that has been applied to many different types of media and technology. It provides a useful framework around why and how people actively seek out specific media to satisfy specific needs (Katz, Blumler, & Gurevitch, 1973). Uses and Gratifications Theory posits that individuals are active agents (rather than passive recipients) of technology and media, that they deliberately choose technology that will satisfy certain desires and needs. Internet users are empowered by choice, with complete control over information sought and information created. They can control and manipulate their online personas, as well as dictate which websites they prefer, and how much time to spend online (Ruggiero, 2000). In this study, how the visually challenged use streaming video like YouTube to satisfy their cognitive needs (Attention, memory, language, knowledge formation, problem solving, decision making). Like cognitive, social, affective, personal needs are gratified as it is the most important needs for humans. Some previous studies conducted by Bakar, Bolong, Bidin, and Mailin (2014) stated that four critical YouTube gratification factors that impact the satisfaction level of YouTube experience (i.e., content gratification, social gratification, process gratification, and technology gratification). For the visually challenged based on their needs and purpose they use YouTube for communication activities, knowledge seeking and also to act independent. Similarly, The UG literature states that individuals contrast in their media use as they vary in their requirements for media utilization, and it is likely that there are particular purposes behind users to use YouTube (Park & Goering, 2016).
Review of Literature:

**YouTube – knowledge Representation**

Fill & Ottewill (2006) proposed that YouTube will be able to embrace communication activities such as discussion, interaction, adaptation and reflection which are seen necessary for learning. The present age of the Web such as using YouTube, is all about two-way communication, collaboration (Ishak, 2002). Hobbs (1998) stated that it can also enhance and capture individual’s attention, motivate interest, and provide relevance to the subject area. You tube can change individuals from passive to active learners (Sharif, 2005). Students need to be engaged actively in processing information, to transmit it from short-term memory to long-term memory, and recall of information is often facilitated when their learned material is encoded in some ways (Giffords, 2009). He added that YouTube can be a good strategy to initiate communication between the individuals and the content which is facilitated by the encoding process. Using You Tube can prompt in giving differing viewpoints, express thoughts and feelings in a healthy way, and practice critical thinking skills (Hinduja & Patchin, 2008).

Cognitive skills of visually challenged:

According to Dodge, Colker, and Heroman (2002), "Cognitive development refers to the mind and how it works. It involves how person think, how they see their world, and how they use what they learn." Cognition involves not only the things that go on inside our heads but also how these thoughts and mental processes influence our actions. Our attention to the world around us, memories of past events, understanding of language, judgments about how the world works, and abilities to solve problems all contribute to how we behave and interact with our surrounding environment (Kendra Cherry, 2019). When it comes to visually challenged, just remember that blindness is not a defect or a stigma. It is a characteristic, just as sight is, and Helen Keller’s words capture this fact beautifully: “I can see, and that is why I can be happy, in what you call the dark, but which to me is golden. I can see a God-made world, not a manmade world.

1. Thinking

Minda (2015) stated that thinking can be construed as set of mental process that use cognitive resources (attention, perception and memory) to manipulate mental representations for generating logical and optimal behaviours (language, decisions, reasons). Thinking is an integrated part of advance cognitive processes including Perception, Memory, Problem Solving, and Decision Making. Humans being are the only species with well-developed brain and cognitive systems, which can think and reason logically to make advantageous decisions. In this way the thought process is unique to humans. Furthermore, many researchers argue that humans are quite capable of predicting and judging information even in the face of incomplete and sparse information. For example, a recent study by Tom Griffiths and Joshua Tenenbaum (2006)looked at people’s ability to make quick judgements about things that they
were not experts in. Cognitive psychologists from that era assumed that thinking involved the representation of external and internal events as internalized mental representations.

2. Attention:
Attention refers to how we actively process specific information in our environment. It is the cognitive process that makes it possible to position ourselves towards relevant stimuli and consequently respond to it. Attention is a complex process that we use in almost all of our daily activities. But attention is not just about centering your focus on one particular thing; it also involves ignoring a great deal of competing for information and stimuli (William James, 1890). Over time, scientists and researchers have found out that attention is not a single process, but rather a group of attention sub-processes. Most brain activities require a lot of attention, whether it is to memorize information, to understand a text, or to find a certain thing. All intellectual activities require attention, either to be generally vigilant, to focus on something in particular, or to divide your concentration among different activities. Popular culture depicts that if one of the senses of a person stops working, the others become sharper. This is not necessarily true! Though visually challenged may rely more on their other senses, and develop a strong attention using auditory cues, they may not always have a sixth sense. However, there is evidence that suggests blind people use a process called ‘echolocation’, whereby sound waves are used to determine the location and size of objects within a particular area. Dr. Gavin Buckingham (2012) says, “They will either snap their fingers or click their tongue to bounce sound waves off objects, a skill often associated with bats, which use echolocation when flying”. According to eminent psychologist and philosopher William James (1890), attention is selective, limited and act as a part of cognitive system.

3. Memory:
Memory is a fundamental capacity that plays a vital role in social, emotional and cognitive functioning. Our memories form the basis for our sense of self, guide our thoughts and decisions, influence our emotional reactions, and allow us to learn. As such, memory is central to cognition and cognitive development. Maltin (2005) stated that memory is the process of maintaining information over time. “Memory is the means by which we draw on our past experiences in order to use this information in the present’ (Sternberg, 1999). Memory is involved in processing vast amounts of information as it takes many different forms, e.g. picture, auditory, semantic. For psychologists the term memory covers three important aspects of information processing like encoding, storage and retrieval. There are different types of memory which is prominent are sensory, short-term, long-term memory. For some, it is easier to memorize visual than verbal information as verbal memory allows to memorize a series of words and to recall them a few minutes later. Visual memory highly depends on our attention skills as visual elements around us constantly have to be analyzed to be memorized. It helps in easily finding the location of objects, in precisely remembering the details of a picture. When it comes to visually challenged they use their other senses like auditory, touch, smell to experience and remember. Many previous studies concluded that the visually challenged have strong memory. The memory is therefore one of the most essential cognitive functions in a person’s life.
4. Perception:
According to Joseph Reitz (1987) stated that “Perception includes all those processes by which an individual receives information about his environment seeing, hearing, feeling, tasting and smelling.” It is the process by which an organism detects and interprets information from the external world by means of the sensory receptors. Perception is not just a matter of sensing the stimulus energy that happens to impinge on the receptors of our sense organs. It is, rather, a process in which we engage when we actively seek the stimulus energy that is likely to yield the information we need in order to realize our purposes. In the course of human evolution our sense organs have been shaped by environmental pressure to be sensitive to the kinds and ranges of stimulus energy supplied by the world in which we find ourselves, and to acquire the information it contains (Gibson, 1966). Visual impairment affects the perception of a person, though uses perception in the context of imagination. This depends on individual specifics and many factors like biological, psychological, social, and spiritual ones. Richard Gregory (1970) proposed that perception involves a lot of hypothesis testing to make sense of the information presented to the sense organs; our perceptions of the world are hypotheses based on past experiences and stored information. Perception not only creates our experience of the world around us; it allows us to act within our environment.

5. Language:
Language is the ability to express our thoughts and feelings through spoken word. It is a tool that we use to communicate and organize and transmit information that we have about ourselves and the world. Language and thought are developed together and are closely related, they mutually influence each other. Language has generally been seen as playing a powerful role in the development of children born with severely impaired vision (Landau & Gleitman, 1985; Warren & Hatton, 2003). Perez- Pereira (1994) and colleagues have maintained over the years that language provides a privileged tool for children with Visual impairment, who rely on it and benefit from it to a greater extent than children who are sighted. Verbal reasoning and intelligence helps children to develop strategies to cope with the loss of a sensory channel. So linguistic competence is an important factor not only in terms of knowledge acquisition where it clearly plays an important role but also that it helps mediate social outcomes in children with severely impaired vision. For children who are visually impaired language-based measures are commonly used to assess their general intellectual level, making it difficult to isolate the contribution of language irrespective of a child’s general cognitive ability. Without language, our ability to transmit information, acquire knowledge, and cooperate with others would become difficult.
6. Decision making:

Decision making is a set of cognitive processes, which interprets stimuli and organises thoughts and ideas (Newman & Cullen, 2002:134). It is one of the fundamental cognitive processes of human beings (Wang et al., 2004; Wang, 2007a; Wang, 2007b) that is widely used in determining rational, heuristic, and intuitive selections in complex scientific, engineering, economical, and management situations, as well as in almost each procedure of daily life. Since decision making is a basic mental process, it occurs every few seconds in the thinking courses of human mind consciously or subconsciously. Each individuals developmental profile and learning is uniquely determined by a complex interplay of factors that visually challenged influences include individual differences in decision making ability, problem solving ability, thinking styles, learning styles, persistence and motivation, sensitivity to a range of cue and information sources in social learning environments (Webster&Roe,1998). Bincy and Raja (2017) stated from the case studies of the visually challenged that teachers have the pivotal role in enhancing their cognitive and non-cognitive abilities. They assist the visually challenged to make wise decisions in personal, motivate and guide them in making right choices. Good decision making is essential skill to become an effective and successful individual and every decision has its impact on individuals.

Streaming videos:

Streaming video service offers a convenient and flexible way of watching online videos, through which users could play the video files simultaneously when the files are being delivered from the server. Many streaming media websites such as YouTube and MSN video provide millions of online streaming videos. Since the very early stages of the Internet (Forgie 1979), it has always been the believed that videos should be streamed to the users over the network: a user can begin playing a video segment before the entire video has been transmitted. A streaming broadcast might be live or recorded, with the core content flowing one way and having somewhat limited interaction capabilities. However, in recent years some streaming solutions have incorporated features that allow users to conduct live chats, post messages, edit, and tag, and share content, thus facilitating and promoting interaction. Streaming as a technological process is nominally defined as multimedia continually delivered to a user (Larsen, 2007). Just as Deuze (2012) believed that we live ‘in’ and not ‘with’ digital media, living within streaming media shifts our orientation regarding networked flow and access, ownership and materiality.

Wellman (1979, 2002) and Rainie and Wellman (2012) take this distinction a step further and from a sociological perspective they argued that digital media have distinctly changed community and resulted in the formation of ‘networked individualism’. They have stated that as a “triple revolution” in digital media and communication technology whereas the first is the social network revolution, Internet revolution and mobile revolution respectively. Alan and Zanetis (2012) proposed that video combines many kinds of data (images, motion, sounds, text) which inclined to the diverse learning styles and have created an individual learning pace. They added that with video, the learner has more control over the information he receives and an additional opportunity for deeper learning by being
able to stop, rewind, fast-forward, and replay content as many times as needed. Greenberg (2012) proposed that the use of video is only beginning to meet the needs of today’s and tomorrow’s learners. Video can help educators address the challenge of different learning styles and enhance the way in which today’s children and youth access, absorb, interpret, process and use information. The video is clearly an essential tool that can have a powerful impact on retention of information as well as engagement.

Research methodology

Mixed approach is adopted for the study. Qualitative approach was incorporated to know how far they were using streaming videos like YouTube in day to day life. It was used for mainly information search, to learn tutorials based on their interest towards specific area and entertainment (to listen songs, trailers, funny videos, reality shows, serials, web series, comedies, films etc). Then also examined how much time they spent on streaming videos, as accessibility features are built-in to Apple and Android devices so that they can use these devices straight away, just like sighted people.

Research Design

Experimental design was used to examine the cognitive skills, formation of knowledge and recalling and storing in memory.

Sources of data

Primary data was collected from the respondents about the usage of streaming videos, how it supports their knowledge building and enhances their cognitive skills.

Secondary data was collected from articles, research journals and webpage articles.

YouTube video – Story of Google

To know the cognition of visually challenged, twenty two minutes of story of Google videos was selected for the experimental study. It consists of a story of Google from its humble beginnings in 1998 to becoming one of the most popular multinational technology companies. It also has a healthy dose of drama, failures, motivation, and a classic tale of starting from the university dorm and making it big. It mainly focuses on the failures and success of Larry Page and Sergey Brin. The video was completely in local language (Tamil) so that they can easily understand and interpret easily. The purpose of selecting this video is to have common connect between the samples in the form of information gathering and it should not watched before by both of the respondents. Before selecting this video it was played at different times to examine the audio level whether it is audible, then the content of the video where it gives clear information and the duration of the video. If the duration was so long they were unable to retrieve and concentrate on the content. So finally, it was decided to have twenty two minutes video. Shorter videos are found to be more engaging (Doolittle et al., 2015), increase learning outcomes (Pi and Hong, 2016).
Total of two people were selected for the study where they have been constantly using YouTube Videos. First, video (Story of Google) was shown to them, and then total of fifteen questions were asked from that video. For each person total of 15 minutes of time spent, questions were asked orally, if they don’t understand; it was clearly repeated again to understand. After a week again ten questions were asked from the same video. During the study, the video played only once and it was not repeated again, then the samples were requested not to watch this video till the experiment gets over. It is to analyze their cognitive skills, memory, and knowledge and recalling ability. Furthermore, question which was prepared for the study was moderate, as it was neither too easy nor tough.

List of Questions : Session 1

<table>
<thead>
<tr>
<th>S.NO</th>
<th>Questions</th>
<th>R 1</th>
<th>R 2</th>
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<tbody>
<tr>
<td>1</td>
<td>At which age Larry Page started doing his homework in word processing.</td>
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<td>2</td>
<td>Whose biography inspired Larry page to do science inventions?</td>
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<tr>
<td>3</td>
<td>Who helped Larry Page for creating browsers, URL, HTML?</td>
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<td>4</td>
<td>What is the name of his Russian friend who always has a tug of war with Larry Page?</td>
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<td>5</td>
<td>What topic was given to Larry Page for this project?</td>
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<td>6</td>
<td>What program was designed to run it?</td>
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<td>7</td>
<td>Who helped to design page rack for Larry Page?</td>
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<td>8</td>
<td>Where they actually started their first office?</td>
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<tr>
<td>9</td>
<td>Which company invested one lakh dollar for their company?</td>
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<tr>
<td>10</td>
<td>At which place Google were started with how many members?</td>
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<tr>
<td>11</td>
<td>Who was the first employee they recruit for Google?</td>
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<td>12</td>
<td>In which year they started their lab at silicon Valley?</td>
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<td>13</td>
<td>In 2004 august 19, how much they sold their share in share market?</td>
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<td>14</td>
<td>Who was their first marketing manager?</td>
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<tr>
<td>15</td>
<td>What did PayPal employers found?</td>
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Marks: 12/15  11/15

Not Answered - *

After the video was shown, the totals of fifteen questions were asked from the respondents. R1 scored 12 out of 15 whereas R2 scored 11 out of 15. They found Q5 is difficult as it contains a sentence; it is very hard to remember for both of the respondents. Q10 and Q12 questions were related to year and place so it might also found difficult to recall. It was clearly stated by Psychologist Hermann Ebbinghaus in his findings in 1885, that initially, information is often lost very quickly after it is learned. The evidence suggests that memory retrieval is more or less automatic process. Thus, divided attention at the same time of recall tends to slow down the retrieval process to some extent.
List of Questions : Session 2

<table>
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<th>S.NO</th>
<th>Questions</th>
<th>R 1</th>
<th>R 2</th>
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<tbody>
<tr>
<td>1</td>
<td>Who is the CEO of Google?</td>
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<td>2</td>
<td>Which company refused to buy Google for 2billion?</td>
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<tr>
<td>3</td>
<td>Who helped Larry Page for creating browsers, URL, HTML?</td>
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<td>4</td>
<td>From which .com Google started to adapt the strategy of advertisements</td>
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<tr>
<td>5</td>
<td>In which year they named as Google?</td>
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<tr>
<td>6</td>
<td>What types of questions were asked to the employees at the time of recruitment?</td>
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<tr>
<td>7</td>
<td>Who helped to design page rack for Larry Page?</td>
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<tr>
<td>8</td>
<td>Where they actually started their first office?</td>
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<td>At which place Google were started with how many members?</td>
<td></td>
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</tr>
<tr>
<td>Marks</td>
<td>8/10</td>
<td>8/10</td>
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Not answered: *

On the second session total of ten questions were asked after a week, to examine whether they able to recall the information which is stored in their memory. They were able to recall and answered correctly for eight questions out of ten, again they were unable to remember year and place. Hermann Ebbinghaus (1885) conducted the first major studies of memory; he stated that strength of memory refers to the durability those memory traces in the brain. He proposed the forgetting curve in which he determines only 63% of material is remembered after 20 minutes and 25% after a month. He added that when a person is able to recall even longer period of time, it seems that person has a strong memory. In such cases, many studies also proved that video based content were able to recall and regenerate it. Due to loss of vision they have to perceive things only through other senses.

**Discussion:**

Findings of the study showed that streaming videos like YouTube enhanced their cognitive skills of the visually challenged. The development of human beings generally depends on cognitive, emotional, intellectual, and social capabilities. Piaget (1936) posits that the Cognitive development is a progressive reorganization of mental processes resulting from biological maturation and environmental experience. He denoted that children construct an understanding of the world around them, through the experience discrepancies between what they already know and what they discover in their environment. Whereas, visually challenged have profound effects on the social, language and communication development and hesitate to explore the world around them due to cognitive disabilities. The findings of the study shows that YouTube videos intensify the cognitive abilities like formation of knowledge, memory, thinking, problem solving, decision making etc.
YouTube – Formation of Knowledge

In concert with global macro-economic changes and the growth of social interconnectedness worldwide, learning is undergoing a major shift, as brick-and-mortar walls are opening up to rich media content. This shift has been influenced largely by technological worldwide access to the Internet, which engrave the visually challenged to perceive, conceptualize and to generate new knowledge in cognitive process. The study found that YouTube streaming videos acts as a powerful agent that adds value and enhances the quality of learning experience. When the video was playing, both R1 and R2 were listened the flow of information frame by frame for understanding the core concept of the video. Due to lack of vision, they rely more on their other senses, and develop a strong attention using auditory cues. The YouTube video was about the story of Google, as it was narrated like a story in a chronological way, both the respondents showed interest towards the video. The impact of video can be summarized by three key concepts like interactivity, engagement, knowledge transfer and memory (Greenberg and Zanetis, 2012). From the study it was able to interpret that R1 and R2 were highly engaged to the content, it insist them to interacts with visual content by applying concepts, this becomes the key principle and a means for cognitive development. Both engagement and interactivity flows into learner to remember the content that becomes the knowledge transfer memory.

Both the respondents were the regular users of YouTube. The R1 responded that according to ones need their mode of choosing the content will be different. He added that his interest towards literature and music made him to access YouTube conveniently. With the advent of rising applications creates the opportunities for equal access to information and independence. In other words, the increasing demands of learning through YouTube can change the learning ecology positively (Kwan et al. 2008). Sherman (2003) also found that watching authentic videos can make the learning process more enjoyable, meaningful and also have the ability to improve learners’ comprehension and elicit information. Moreover, researchers have consistently found that YouTube is an effective tool that can build learners’ knowledge and help them improve their cognition skills. Also, watching YouTube videos can help learners communicate and experience the events in the videos. The reason YouTube has become as successful as it is today, is because it’s extremely user friendly so everyone has access to it (Jessica A. Zanatta, 2017).

Moreover the audio of the YouTube was so clear which enable the respondents to interpret easily, then content delivery was maintained through particular speed so that they were able to perceive the content. Many studies suggested that YouTube videos becomes a tool for improving listening comprehension will provide real-life listening with plenty of information that individuals can relate to their life experience. In study by Liang (2013, p. 1) on the effect of audio-visual materials on listening comprehension he found that “if the sound messages are closely correlated with the visual ones, people’s cognitive schema can be stimulated and enriched, which will give concrete and vivid clues to their treatment of the sound materials, and improve their level of listening comprehension”. YouTube videos can provide visual stimuli such as the environment and that can lead to generate prediction and a chance to activate background schemata (Channing-Wilson, 2000). But for the visually challenged audio play a
prominent role to emphasize everything around them and also YouTube videos have become a standard means of communication with important information that is available only in video and is not found in print form.

Attention
Both the respondents R1 and R2 were paid attention towards the content of the video till it gets over. It was understood that the value of the content is limited and it was not over loaded. However, there is so much content available it causes a limit to attention. Western societies currently live in a network society in which individuals are exposed to a high level of information exchange and changing activities (Van Dijk, 2006). In this network everyone is able to connect and communicate to each other. With the overload of information and communication it is not possible to read everything on the Internet and users have to make a selection of what to read or what to ignore. Users should aware on selective perception as content has to be unique and must be of value for its audience in order to be listen, read, and shared. The R2 responded that attention is also ignored what we don’t need and also he added that YouTube can increase interest and better capture attention for smoother information retention.

Memory
YouTube videos can also stimulate the two channels visual and auditory of the working memory in the brain which results in the increasing of the long memory content (Berk, 2009). When people watch videos, the information they learn will stay active in their memory and easy to recall. Moreover many experimental studies proved that the visually challenged people have high memory than sighted peers, as they perceive stimuli from different senses. During the experiment, R1 and R2 were able to answer almost all the questions. They retrieved the information very easily in the first session. To know their memory, another session was conducted with an interval of one week with different set of questions to test their knowledge and recalling ability. In the second session they answered well but again unable to recall the places and names. According to Fergus Craik and Robert Lockhart (1921) memory recall of stimuli is also a function of the depth of mental processing, which is in turned determined by connections with pre-existing memory, time spent processing the stimulus, cognitive effort and sensory input mode. This video has given them knowledge about the story of Larry Page, the inventor of Google. Additionally, YouTube assists learners to remember the content in an efficient manner and make the lesson simple and interesting. Then both the respondents delay and also unable to answer, retrieve information related to questions like year and place. Atkinson (1901) done many studies on human memory, he revealed that distraction also slow down the retrieval process. Many psychologists have yielded that more recent event are more easily remembered in order especially with auditory stimuli, recall decrease as the length of the list or sequence increases.
Language:
YouTube is a video sharing website that allows users from over the world to watch videos posted by other users and upload videos of their own. It includes several kinds of videos such as educational, entertainment, political, historical, medical, and personal videos. It offers fun and fast access to instruction, culture-based videos, and languages from all over the world (Terantino 2011). For the study, Google story video was taken which is in interpreted in Tamil language for easy understanding. Even both the respondents agreed that YouTube play a role in constructing language, as loss of vision lack delay in language acquisition. The R1 respondent responded that he was learning Hindi using YouTube videos, where as R2 respondent concentrating on his vocabulary with the help of YouTube Videos. In addition, audio-visual effects enable learners to understand their lessons comprehensively and simplify complicated ideas. Video presentations using YouTube are more interesting, stimulating, and challenging than traditional audio-based language. Jun Choi & Johnson (2005) and similarly, Bravo, Amante, & Enache (2011) have conducted studies on the effect of video-based instruction on students’ motivation compared to the traditional instruction, both of their studies supported that it creates a positive impact on learners’ motivation and retention compared to traditional-based instruction. They added that YouTube videos as more enjoyable ways to learn comprehension skills, they found them more motivational, beneficial and interesting.

Problem-solving:
The respondent R2 responded that YouTube act as a problem solving, as he was active in social media, his Facebook account was once hacked he retrieved it by watching YouTube video to solve this issue. Then during his online transaction in banking, if he faced any technical issue or any transaction issue, instead of asking help from the bank, he accessed YouTube post to solve this issue. In the 21st century, rapid proliferation of technology render streaming video as an effective tool for accelerating learning and also improving high-quality learning. The R1 respondent responded that when he wanted to learn his piano lessons, he used YouTube tutorials to solve his doubts for learning. He added that everyone don’t possess YouTube only for learning, as it is based on their needs. Similarly, Kelsen (2009) suggested that access to video apparently encourages students to develop their problem-solving abilities.

Decision-making:
Nowadays, personal opinions and experiences have become one of the most valuable sources of information in decision-making process (Chua & Banerjee, 2015; Dellarocas, 2003). Here, both the respondents responded YouTube strongly influence them in decision making. Before experiencing something they go for YouTube Videos to check whether it will work or not. They rather trust technology than humans. Brown & Hayes (2008) suggested that in decision making they tend to copy others, but when it comes to the visually challenged they won’t copy others, based on their need they will take decisions.
Q1: why do you prefer watching streaming Videos like YouTube?

R1: I should be thankful to the technology that at the age of 24, I have completed the Master of Philosophy which is incredible for me to believe, as I lost my eyesight by birth. It is used both as a tool for learning and communication, as it is easy to access that increases participation, achievement or independence. It is important to thoughtfully consider what devices, tools and technologies will be appropriate to meet the person’s unique learning needs. Here I especially prefer YouTube for educational purpose like learning, preparing for competitive exams, to listen speech, current affairs, news clippings, entertainment etc. Moreover I spend five hours a day in YouTube as I lay pocket friendly data plans. Comparatively it is considered as an easy source of access with screen reader application and also it generates an opportunity to acquire knowledge, creates a space for social interaction, invigorate to act independently.

R2: As I am a congenital blind I never thought this would suppress my abilities. Through screen reader applications, Talk back, JAWS software, AI applications etc. these assistive technology broke all my barriers towards learning. I access and experience YouTube everyday tailor to my individual needs. I am a tech-savvy and also broadcasting a YouTube channel for the visually challenged, this made me to post a video which will be useful for them. I used to watch YouTube streaming videos for acquiring knowledge about upcoming gadgets, Smartphone applications, experimenting new devices for the visually challenged. This gives me communication power, information gathering, it increases cultural understanding, awareness about the environment. It enhances my cognition too, where I can able to analyze the problem, evaluate and made me to think to provide solution.

Conclusion:

The prevalence of the using YouTube in day to day life of the visually challenged has increased exponentially over the past decade, and this trend is likely to continue in the future. The findings of the study showed that streaming videos enhance the cognitive skill of the visually challenged people and also it increases their knowledge. At the same time, the research indicates that the visually challenged today are fundamentally different from previous generations in the way they think and in the way they access, absorb, interpret, process and use information, and above all, in the way they view, interact, and communicate in the modern world. YouTube culture has shaped our society, as it is considered as a great resource for the visually challenged which creates an opportunity to build knowledge and empower them to learn flexibly and independently.
References:


