

## Exploring The Influence of Youtube Kids App on Children's Cognitive Skills

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### Abstract

As the use of digital media continues to rise, the YouTube Kids app has become increasingly popular as a means of entertainment and instruction for kids. However, other people are worried about how this trend can affect kids' brains. The purpose of this research is to investigate how using the YouTube Kids app affects children's brain function, specifically their ability to pay attention, absorb information, remember it, communicate effectively, solve problems, and think critically. This investigation makes use of a mix of cognitive tests and in-depth interviews with the children's parents as part of its qualitative research technique. The results of the study provide important advances to our knowledge of how the app affects kids' brain growth. In addition, these results have substantial policy, educational, and parental consequences. The study also recommends that proper check and balance should be from parents is a must to get maximum benefit from digital gadgets and social media usage by the children. This study also explored the impact of the YouTube Kids application on the cognitive development of children, taking into account demographic factors such as age and the type of content consumed. The study also revealed the prevalence of captivating content available on YouTube Kids may lead children to prioritize this platform over conventional learning methods, such as reading books or participating in structured educational activities, resulting in a diminished emphasis on traditional learning.

**Keywords:** *YouTube Kids app, Cognitive Skills, Language Development*

### Introduction

The widespread use of digital technology has drastically affected the



ways in which we interact with information and media. YouTube's large library of videos covering a wide range of topics attracts a huge user base, including youngsters, and has earned it widespread recognition as a leading and influential digital platform. Concerns over YouTube's impact on children's brain development and ability to learn have grown in tandem with the site's meteoric rise in popularity. As published by (Firth, et al., 2019).

In response to these worries, YouTube launched the YouTube Kids app, a dedicated service that curates and delivers only material appropriate for children under the age of 13. The YouTube Kids app has garnered significant popularity among parents due to its promotion as a safer and more child-friendly alternative to conventional YouTube. This app is widely utilised by parents to offer their children educational and entertaining content. The widespread availability of digital media presents distinct possibilities for educational and exploratory purposes; however, it has also prompted inquiries regarding the potential hazards linked to unrestricted exposure to a wide range of content (Castro, 2019). There has been considerable concern among researchers, educators, and parents regarding the potential impact of the YouTube Kids application on various cognitive abilities in children, such as attention span, memory retention, language development, and problem-solving skills.

The primary objective of this research article is to comprehensively examine the impact of the YouTube Kids application on the cognitive abilities of children. Through the meticulous examination of data derived from a meticulously crafted study, our objective is to unveil the various impacts, both advantageous and disadvantageous, that the YouTube Kids application has on the cognitive development of children. The research will employ the qualitative method based on interviews, in order to gain a comprehensive comprehension of the effects of the application on the cognitive development of young

individuals. (Abbas, 2019).

The research holds importance not only in elucidating the correlation between the YouTube Kids application and the cognitive abilities of children, but also in providing guidance to parents, educators, and policymakers regarding the suitable utilisation of digital media for the educational and developmental progress of children. This study aims to provide valuable insights into the responsible integration of technology in early childhood education and entertainment by identifying potential risks and benefits (Paudel, 2021).

In light of the increasingly blurred distinctions between traditional and digital media, it is crucial to examine the impact of digital platforms, such as the YouTube Kids app, on the cognitive capacities of children (Neumann, 2020). This research endeavour aims to offer evidence-based recommendations that can assist parents and educators in making well-informed decisions regarding the media consumption habits of the next generation. The objective is to protect and promote the cognitive development of children in an era characterised by pervasive digital technologies. Furthermore, the prevalence of the YouTube Kids application gives rise to thought-provoking inquiries regarding the nature of the material children are subjected to and its potential impact on their cognitive faculties. The application's algorithmic recommendation system, which has been specifically developed to tailor content according to users' past engagements, exposes children to a wide array of videos, potentially influencing their patterns of attention and preferences. As the duration of children's engagement with the application increases, it becomes imperative to comprehend the potential long-term impacts it might have on their cognitive abilities and educational aptitude (Hassinger, 2023).



The YouTube Kids app has received commendation for its extensive range of educational content that caters to diverse interests and age groups. However, there is an increasing apprehension surrounding its potential disadvantages. Sceptics contend that the application's dependence on autoplay functionalities and uninterrupted video streaming could potentially result in passive consumption, thereby reducing children's capacity to concentrate and actively analyse the content. Furthermore, the potential occurrence of encountering inappropriate or detrimental content within the ostensibly child-friendly setting elicits legitimate concerns among both parents and researchers. In order to acknowledge these concerns and evaluate the influence of the YouTube Kids application on the cognitive abilities of children, this scholarly article will employ a comprehensive methodology (Blumberg, 2019). Through the examination of data obtained from controlled experiments as well as real-world usage, our objective is to obtain a thorough understanding of the impact of the application on cognitive processes such as information processing, memory retention, language acquisition, and problem-solving skills.

According to Bornstein, et al (2020) In order to carry out this research, a heterogeneous cohort of children spanning different age ranges will be enlisted, and their engagement with the YouTube Kids application will be meticulously observed throughout a predetermined timeframe. The collection of data through qualitative insights will be obtained by conducting interviews with parents. Through a comparative analysis of the cognitive development exhibited by children who engage in regular usage of the YouTube Kids application and those who do not, our objective is to discern and delineate the distinct influence of the aforementioned application on the acquisition of knowledge and cognitive abilities (Kim, 2021). Furthermore, an examination will be conducted to investigate the influence of various factors, including the type of content, the length of time spent using it, and the level of parental

involvement, on the formation of these effects.

It is expected that the outcomes of this study will make a valuable contribution to the advancement of scientific knowledge as well as provide practical recommendations. (Harriss, 2019). As we further explore the intricate correlation between digital media and the development of children, our findings possess the potential to provide guidance for future developers of applications and creators of content. This guidance can aid in the creation of platforms that maximise cognitive advancement in children, while simultaneously ensuring a secure and enriching experience (Baker, & Yang, 2018).

The examination of the impact of the YouTube Kids application on the cognitive abilities of children is an essential endeavour in comprehending the consequences of digital media in the realm of early childhood education (Han, 2020). Through an examination of the app's effects, this study aims to provide parents, educators, and policymakers with the necessary information to make well-informed choices that promote cognitive development and responsible media consumption among young individuals (Bhopal, 2020). The research seeks to shed light on both the advantageous and disadvantageous consequences of the app's influence. In light of the ongoing advancements in technology, it is incumbent upon us to judiciously exploit its potential, thereby transforming it into a vehicle for cultivating the cognitive aptitude of forthcoming cohorts.

### **Significance of the Study**

The present study holds considerable significance as it aims to provide insights into the impact of the YouTube Kids application on the cognitive abilities of children. This particular domain has generated considerable apprehension among parents, educators, and policymakers. Through a comprehensive investigation, this research seeks to examine the impact of this



widely used digital platform on the cognitive and psychological development of young individuals. The primary objective is to generate evidence-based insights that can contribute to the advancement of knowledge in the fields of child development, media psychology, and educational practises.

The outcomes of this research will hold practical ramifications for parents and carers, who frequently depend on the YouTube Kids application as a means to offer educational and enjoyable material for their offspring. By comprehending the potential implications on attention span, information processing, memory, language development, and critical thinking, parents can make well-informed choices regarding the suitability and regulation of application usage. This will ensure a harmonious digital encounter for their children, characterised by equilibrium.

This research will provide valuable guidance for educators and content creators in designing age-appropriate and enriching content for children, thereby benefiting them as well. Through the identification of content types that have a positive impact on cognitive skills, educational resources can be customised to more effectively cater to the developmental requirements of children, thereby improving learning outcomes and fostering increased engagement.

In addition, policymakers and regulatory bodies can employ the outcomes of this study to enhance their understanding and shape guidelines and policies pertaining to the consumption of digital media among young audiences. Given the dynamic nature of the digital environment, this study has the potential to make a valuable contribution towards promoting responsible and secure digital behaviours, thereby safeguarding the cognitive growth of children within an increasingly technology-centric society.

## **Research Objectives**

- To examine the relationship between the YouTube Kids app usage and the potential impact on children's attention span and information processing abilities. This will be achieved through the implementation of controlled cognitive experiments and observations.
- To Probe the correlation between the various types of content frequently accessed through the YouTube Kids application and their influence on the memory retention and language development of children.
- To scrutinize the impact of the YouTube Kids application on the problem-solving and critical thinking capabilities of children.

## **Research Questions**

1. What is the relationship between the YouTube Kids app usage and children's attention span and information processing abilities?
2. What is the correlation between the extent of content exposure facilitated by the YouTube Kids application and the cognitive processes of memory retention and language development in children?
3. To what extent does the YouTube Kids application exert influence on the problem-solving capabilities and critical thinking skills of children, and are there variations in this influence based on age and the type of content consumed?

## **4. Literature Review**

There is a lot of curiosity in how kids' exposure to screens of all kinds affects their brain development because of the media's increasingly pervasive presence in their everyday lives. YouTube Kids, a specialised app based on the popular video-sharing website, has quickly become a go-to resource for kids

looking for instructive and recreational content. The aim of this literature review was to critically examine the existing academic studies on the effects of the YouTube Kids app on children's cognitive capacities, with a focus on attention, learning, memory, and language development.

Firth et al. (2019) researched to investigate the various effects that screens have on kids' focus. Interactive material may help with focus, according to some studies, but too much time in front of a screen may lead to distraction and a shorter attention span, according to others. The videos on the YouTube Kids app, with their fast speed and eye-catching features, may be able to hold kids' interest. However, this captivating nature may also impede their capacity to maintain focus on conventional educational activities.

Jones and Cuthrell (2011) conducted an analysis in which they examined the content of YouTube Kids and found that it provides a wide range of educational videos with the aim of fostering learning and the acquisition of skills. Several studies suggest that appropriately designed educational materials have the potential to enhance cognitive abilities in children, specifically in areas such as problem-solving and critical thinking. Nevertheless, the absence of meticulous content curation and stringent quality control measures on the platform may subject children to non-educational or unsuitable material, thereby potentially impeding their educational advancement.

Boerman and Van Reijmersdal (2020) examine the potential impact of the audiovisual characteristics of YouTube Kids content on the memory and recall capabilities of children. The utilisation of short video formats characterised by rapid transitions has the potential to influence the process of encoding and consolidation of information within the long-term memory. Moreover, the proliferation of content could potentially result in diminished memory retention, as children may encounter difficulties in retaining information due to the extensive quantity of videos they consume.



Flavell, (2005) investigates that the development of language is a fundamental component of cognitive advancement in the early stages of childhood. While certain studies indicate that interactive digital media has the potential to enhance language acquisition, there are lingering concerns regarding the potential adverse effects of excessive screen time on language development. These concerns primarily arise from the possibility that excessive screen time may displace face-to-face communication and interactions with carers, which are known to be crucial for language enrichment.

Alqahtani, et al (2023) scrutinize the inclusion of user-generated content in YouTube Kids provides children with exposure to a wide range of perspectives and information, thereby fostering digital literacy and critical thinking skills. Nevertheless, the content curation on the platform gives rise to apprehensions regarding the digital literacy proficiency of children and their capacity to differentiate between credible information and sources that lack reliability. The cultivation of critical thinking skills is imperative in assisting children in effectively navigating the extensive array of content accessible through the application.

The existing body of literature sheds light on the intricate impact of the YouTube Kids application on the cognitive abilities of children. The presence of educational and carefully selected content has been shown to have beneficial impacts on cognitive development, whereas excessive screen usage and exposure to inappropriate material can lead to negative outcomes. Further investigation is warranted to gain a more comprehensive understanding of the precise mechanisms by which the YouTube Kids application impacts the cognitive abilities of children. Additionally, it is important to explore potential approaches to enhance the content of the app in order to promote favourable cognitive outcomes. Parents and educators assume a pivotal role in facilitating

children's media consumption, thereby fostering a well-rounded approach to digital engagement and promoting optimal cognitive development.

### **Research Methodology**

This study will utilise qualitative techniques to thoroughly investigate the impact of the YouTube Kids app on the cognitive abilities of children. This particular methodological approach facilitates a more comprehensive analysis by incorporating qualitative insights obtained from participants and their parents.

### **Population**

Parents of students of both male and female from public and private institutions of division Sahiwal was the population of this specific study.

### **Sample**

Convenience sampling will enrol a sample of YouTube youngsters app-heavy youngsters aged four to eight. Participants may come from schools, neighbourhood organisations, and online parent support groups. Convenience sampling collects data from accessible and cooperative people.

### **Sample Size**

10 parents from tehsil Sahiwal and 10 parents from tehsil Chichawatni were selected as the sample size of this specific study.

### **Data Collection Instrument**

Microphone Recording: Questions asked to parents in order to collect data pertaining to their child's patterns of app usage, preferences for content, and any noticeable alterations in cognitive behaviour.

The study will employ interviews to gather comprehensive data from a selected group of participants and their parents. The goal is to learn more about their interactions with the YouTube Kids app and their impressions on its effect on their mental development.

### **Procedure For Data Collection**

- We will utilise convenience and stratified sampling to choose participants. Under-18s require parental consent to participate.
- Monitored App Use The YouTube Kids app will be monitored for a while. App analytics can tell us how frequently and for how long users use an app and what information they prefer to view.
- Parental surveys: we'll ask research participants' parents to complete out an interview form on their child's app usage and cognitive habits. This adds context to the analysis.
- This study requires in-depth interviews with certain participants and their parents. These interviews aim to learn how the app has altered brain function.

### **Data Analysis and Discussions**

The YouTube Kids application has emerged as a prominent platform for both entertainment and educational purposes among children, providing a wide range of videos specifically curated for young viewers. Nevertheless, there have been raised concerns regarding the potential consequences of extended utilisation of applications on the attention span and information processing capabilities of children. This argumentative analysis aims to explore the correlation between the utilisation of the YouTube Kids application and various cognitive factors. It will present a comprehensive examination of both



perspectives in the ongoing discourse, and ultimately draw conclusions based on existing scholarly investigations.

### **The adverse effects of certain factors on attention span and information processing abilities**

The YouTube Kids app is distinguished by its visually captivating and dynamically paced content. Repetitive exposure to such audiovisual content has the potential to overwhelm the sensory faculties of children, resulting in a decline in their ability to sustain focus and attention, as they progressively adapt to the continuous fluctuations in visual and auditory stimuli. The excessive amount of visual stimuli may lead to challenges in the cognitive processing and retention of information derived from comparatively less engaging sources.

The prevalence of captivating content available on YouTube Kids may lead children to prioritise this platform over conventional learning methods, such as reading books or participating in structured educational activities, resulting in a diminished emphasis on traditional learning. The change in emphasis could potentially lead to a decline in sustained attention and the capacity to comprehend information from traditional educational resources.

The YouTube Kids app offers users immediate access to a continuous flow of videos, thereby providing instant gratification through the provision of entertaining content. The presence of this mechanism for immediate gratification may potentially contribute to a diminished capacity for sustained focus, as children develop a tendency to actively pursue rapid and ever-changing stimuli.

The absence of active engagement is evident in the passive consumption of videos on YouTube Kids, which does not necessitate the same degree of

active involvement as interactive learning activities. The passivity exhibited in the consumption of content by children has the potential to impede their information processing capabilities, as it may discourage active engagement and critical analysis of the material being presented.

### **Counterargument: Positive Effects on Attention Span and Information Processing Abilities**

YouTube Kids caters to children's interests and learning requirements with a broad choice of instructional material. Educational movies may help kids focus and digest information. This is because kids actively engage with instructive and intellectually engaging information.

YouTube Kids videos with interactive components like problem-solving quizzes and educational games encourage young viewers to participate. Such content may improve children's cognitive development and information processing.

The YouTube Kids app encourages adaptation and flexibility by allowing youngsters to explore a broad variety of themes and subjects based on their particular tastes. Children's ability to change and adapt has the potential to increase their intelligence by making it easier for them to learn new things and retain information.

Correlation between how much time a youngster spends on the YouTube Kids app and how well they learn new words and how well they remember what they've learned?

The YouTube Kids app has a tonne of great material for kids of all ages,



perfect for satisfying their natural curiosity and broad range of interests. It's natural to wonder whether there's a correlation between how much time kids spend watching videos on the site and how that could affect their brain development and cognitive skills. The purpose of this argument analysis is to look at the argument from both sides and determine how well each side holds up.

### **Argument in support of the positive association between content exposure and cognitive processes**

There is hope that children's exposure to so much new information via the YouTube Kids app will have a beneficial effect on their ability to remember what they've seen. Children may benefit from the memory-building process by watching a variety of films since they increase their exposure to new knowledge and experiences. Having youngsters actively engage with educational materials has the potential to increase their ability to remember what they've learned.

The YouTube Kids app creates a rich language environment for children, including narrative discourse, musical compositions, and instructional resources, all of which contribute to the development of the child's linguistic skills. Frequent exposure to diverse language styles and vocabulary has the potential to facilitate language acquisition, enhance vocabulary growth, and foster linguistic ingenuity among young learners.

The utilisation of videos on YouTube Kids frequently employs a combination of visual and auditory elements, thereby augmenting the process of contextual learning. The utilisation of visual cues and auditory stimuli has the potential to enhance memory retention and facilitate the application of knowledge in pertinent contexts.

### **Counterargument: Inverse Relationship between Content Exposure and Cognitive Processes**

The Phenomenon of Decreased Attention Span in Contemporary Society The extensive range of content accessible through the YouTube Kids application may result in shorter video durations and frequent transitions between videos. The act of consuming content at a rapid pace has the potential to result in shorter attention spans and hinder the effective encoding of information into long-term memory, ultimately leading to a negative impact on memory retention.

**Superficial Learning:** Although the platform offers a wide range of subjects, the concise format of videos may restrict the potential for comprehensive learning experiences. Limited exposure to diverse subjects can impede the retention of knowledge at a profound level, resulting in a shallow comprehension that lacks the integration of intricate concepts.

**Language Quality and Development:** While the YouTube Kids app does include educational content, it also includes user-generated videos that may not meet the same standards of linguistic quality and structural integrity as those found in educational programmes or literary works. Excessive exposure to informal language styles and incorrect grammar can potentially impede language development, rather than facilitating improvement.

### **The YouTube Kids application: Impact on children's problem-solving skills and critical thinking abilities**

The YouTube Kids application has experienced a significant surge in popularity, establishing itself as a prominent platform for children's entertainment and educational content. The platform offers a diverse range of content that caters to audiences of all age groups. The consideration of its impact on children's cognitive abilities, specifically their critical thinking and problem-solving skills, is a significant determinant in determining its usage.



This study explores the impact of the YouTube Kids application on the cognitive development of children, taking into account demographic factors such as age and the type of content consumed.

### **Having a positive influence on problem-solving and analytical skills**

The primary objective of the instructional films and interactive material accessible on YouTube Kids is to foster critical thinking skills and problem-solving abilities among children. Numerous educational films for children incorporate puzzles, games, and various activities that are specifically crafted to foster analytical thinking and facilitate the growth of problem-solving abilities.

The application offers a broad range of information that possesses the capacity to educate children about various worldviews and civilizations. Children have the potential to develop critical thinking skills through the aforementioned exposure. This exposure enables them to engage in activities such as comparing and contrasting ideas, and recognising distinctions between them. Consequently, this approach facilitates individuals in cultivating a heightened level of receptiveness towards alternative viewpoints, thereby fostering a more comprehensive comprehension of the surrounding world.

The portal also has user-generated material, such as arts and crafts guides and narrative lessons, to encourage youngsters to think outside the box and come up with novel approaches to problems.

### **Counterargument: Limited influence on problem-solving and analytical skills**

Analysing the Trend of Mindless TV Watching In its current iteration, the YouTube Kids app positions children largely as viewers of content rather than creators of their own. It's possible that this dynamic limits kids'



opportunities to actively participate in problem-solving and critical thinking. Consistently encouraging kids to use their critical thinking and problem-solving abilities may be difficult when all they do is consume knowledge.

**Inadequate Learning in Context:** There may be a lack of context in some of the content provided on the site, which makes it difficult to acquire sophisticated analytical abilities. Without the right environment and coaching, kids may struggle to develop critical thinking skills that go beyond surface-level understanding.

**age-appropriate content delivery:** giving people what they can really enjoy depending on their age. The YouTube Kids app's potential impact on kids' problem-solving and critical-thinking skills varies with their age and stage of development. Children of a younger age may benefit from simple problem-solving activities, while those of a more mature age may need more complex and intellectually demanding content.

### **Conclusion**

The effects of the YouTube Kids app on children's problem-solving and critical-thinking skills are multifaceted and include both positive and negative factors. Studies have shown that providing children with instructional information and exposing them to other points of view has a beneficial effect on their cognitive capacities, encouraging the growth of both analytical thinking and creative problem solving. Passive information consumption and the lack of contextual learning may, however, limit the app's ability to promote active problem-solving and deep critical thinking.

There are two major determinants of YouTube Kids' impact: age and content category. Tailoring the information to fit with age-appropriate

difficulties and providing chances for active involvement may maximise the platform's influence on problem-solving and critical thinking. Children of all ages may benefit from well selected instructional materials, but older students may need more challenging reading in order to enhance their critical thinking skills.

Parents and teachers need to take an active role in their children's media consumption in order to maximise the positive effects of the YouTube Kids app. Children's understanding and analytical thinking may benefit by encouraging topical discussion, posing questions without a single correct response, and providing supplementary resources. Careful supervision of screen time and the inclusion of real-world learning experiences are required to maximise the app's benefits while mitigating its possible downsides.

The YouTube Kids app offers great promise as a tool for fostering children's learning and problem-solving skills. Parents and teachers may create a setting that is optimal for developing students' capacity for critical thinking and problem solving by making use of educational material and encouraging students' active participation. However, in order to ensure that the app successfully boosts children's cognitive development and holistic growth, it is crucial to employ a careful and fair method towards the consumption of information.

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