International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

Examining the Influence of Short Videos on Attention Span and its Relationship with Academic Performance

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Abstract: ***This research examines the relationship between time spent watching short videos and academic performance. A mixed methods approach was employed, utilizing semi-structured questionnaires with Likert scale and open-ended questions. The questionnaire was distributed to over 200 students to gather data on short video usage and exam scores. Additionally, 10 heavy short video users (4+ hours daily) were interviewed regarding effects on attention span. Quantitative results revealed a negative correlation between hours spent on short videos and exam scores in secondary school. Interview data found frequent short video viewing contributed to perceived attention deficits among students. Taken together, findings indicate high short video consumption can adversely impact academic achievement due to reduced attention span. This suggests a need to raise awareness of appropriate short video usage among students to mitigate risks of Overuse. Limitations and future search directions are discussed.***

Keywords: Attention span, Short videos, media consumption, screen time, concentration

1. Introduction

The emergence of videos has been a breakthrough, in the digital era. Platforms such as TikTok, YouTube Shorts and Instagram Reels have enabled individuals to produce and distribute captivating video content. Consequently, there has been a surge, in the duration of time people dedicate to consuming these bite videos.

Nevertheless, there is a growing worry regarding the consequences of brief videos, on our ability to concentrate and perform well academically. Several studies have indicated that short videos can hinder our focus on tasks and even contribute to attention deficit issues. Moreover the condensed nature of these videos often results in an overload of information which can strain our abilities.

In todays world marked by advancements and the widespread influence of digital media short videos have emerged as a prevalent form of content consumption among young people. These captivating snippets of information and entertainment have captured the interest of millions across the globe.

However the widespread use of videos has also given rise to concerns about their impact, on aspects of student life particularly their capacity to concentrate and achieve academic excellence. The main objective of this research is to explore the urgent matter at hand aiming to comprehend the impact of videos, on students ability to concentrate and more significantly the tangible outcomes this might have on their academic performance. With the proliferation of smartphones and high speed internet students now have access to a range of short video content spanning from educational tutorials to viral trends. This accessible content gives rise, to queries; How do these apparently harmless videos influence students attention spans? Do they contribute positively to the learning process. Do they act as distractions that impede accomplishments?

To answer these questions comprehensively, our study employs a multifaceted approach, combining quantitative analysis with qualitative insights. By collecting data through semi-structured questionnaires and in-depth interviews, we aim to uncover the nuances of short video consumption among students. We examine the number of hours spent on short videos, the frequency of usage, and students' academic performance in their 10th and 12th grades. Furthermore, through direct conversations with students who report substantial daily short video consumption, we seek to gain a deeper understanding of the challenges they face concerning attention and concentration.

This research is vital in the context of modern education, where the lines between digital and physical learning environments are increasingly blurred. As technology continues to shape educational practices, educators, policymakers, and parents alike must grapple with the implications of short video consumption. Our findings aim to provide valuable insights into how students interact with short videos and how this interaction affects their ability to succeed academically. Ultimately, our goal is to inform strategies that balance the benefits of multimedia engagement with the maintenance of robust attention spans and academic achievements among today's students.

2. Literature Review

Nitesh Tripathi's (2021) Paper in the International Journal of Creative Research Thoughts explores how excessive smartphone use negatively affects youth's attention spans. It cites increased smartphone use among young people and discusses issues like constant distraction, reduced focus, and multitasking's impact on filtering information. The paper recommends setting time limits, turning off notifications, and parental role modeling to address these concerns. In summary, it highlights the need to manage smartphone use to support healthy attention span development in youth.

K. Bhushan (2021): The impact of shorts and reels on attention span & strategies to enhance focus" The article

discusses the potential impact of short-form content, such as TikTok and Instagram Reels, on attention span. The author argues that these platforms can lead to a decline in attention span by conditioning our brains to seek immediate gratification and novelty. When we are constantly bombarded with short, attention-grabbing videos, it becomes more difficult to focus on tasks that require sustained attention, such as reading or learning.

The author cites a number of studies that support this claim. For example, one study found that people who watched short-form videos for 30 minutes a day had shorter attention spans than those who did not watch short-form videos

Yao Qin, Bahiyah Omar, and Alessandro Musetti (2022) The addiction behavior of short-form video app TikTok: The information quality and system quality perspective, The article investigates why TikTok is addictive. The authors argue that TikTok's addictiveness is due to its high-quality information and system. TikTok's algorithm shows users videos that are relevant to their interests, and the videos are generally accurate and up-to-date. TikTok's user interface is easy to use and navigate, and the system is reliable and secure. More research is needed to better understand the causes and consequences of TikTok addiction.

3. Objectives of the study

1) Examine the relationship between short video consumption and student's attention span
2) Assess the impact of short video usage on academic Performance among students
3) To evaluate students' ability to retain educational content from short videos.

Hypothesis

Null Hypothesis (H0): There is no significant relationship between the time spent on short videos and academic performance among students.

Alternative Hypothesis (H1): There is a significant negative relationship between the time spent on short videos and academic performance among students.

4. Research gap

While existing literature has extensively explored the influence of social media and short videos on attention span, there is a notable gap in understanding how these digital distractions specifically relate to and impact the academic performance of students. This research seeks to bridge this gap by investigating the direct relationship between short video consumption, attention span, and academic outcomes, shedding light on an important aspect of digital media's impact on education that has received limited attention in prior research.

5. Methodology

Research Design: This study employs a mixed-methods research design, combining both quantitative and qualitative approaches. Quantitative methods were used to assess students' academic performance, while qualitative methods were employed to understand the attention span of students who spent more than four hours on short videos**.**

Participants: A total of 200 selected through a purposive sampling technique, participated in the quantitative phase of the study. Additionally, ten students who reported spending over four hours daily on short videos were interviewed during the qualitative phase.

Data Collection Methods:

Quantitative Data Collection: For the quantitative aspect, data was collected through surveys and questionnaires distributed to the participants. These surveys focused on assessing students' academic performance. Data collection commenced on July 30, 2023, and concluded on September 12, 2023.

*Qualitative Data Collection***:** To explore the attention span of students with extensive short video usage, semi-structured interviews were conducted with the ten selected participants. These interviews provided in-depth insights into their experiences and challenges.

Variables: The independent variable in this study is the time spent on short videos, while the dependent variable is students' academic performance.

Data Analysis: To determine the correlation between the independent and dependent variables, correlation analysis and regression analysis were employed. These statistical techniques allowed us to examine the relationship between short video consumption and academic performance.

Qualitative data obtained from interviews underwent thematic analysis. This qualitative approach helped identify common themes and patterns related to attention span among students with prolonged short video exposure.

Ethical Considerations: Ethical guidelines were strictly adhered to throughout the research process. Informed consent was obtained from all participants, and their responses were treated with utmost confidentiality**.**

Data Presentation: Research findings will be presented using a combination of tables, graphs, and narrative descriptions to provide a comprehensive understanding of the study's results.

6. Finding

To enhance the accuracy of our analysis, we categorized the students into four distinct groups based on their short video consumption habits, with a particular focus on Instagram Reels. This categorization aimed to capture the diverse spectrum of usage patterns among students and shed light on the potential correlations between their digital media engagement and academic performance. By segmenting the student population into these categories, we gained valuable insights into how varying levels of short video exposure might impact their educational outcomes. These categories allowed us to explore the intricate relationship between the time spent on short videos, the frequency of engagement, and the resulting effects on class 10th and class 12th academic performance.

6.1 Category :1

Students in this category spend an average of 1 hour on short videos and open them approximately 17 times. This indicates moderate engagement with short videos, neither too excessive nor too limited.

Table 1: Category 1 specifications

	Marks in 10th	Marks in 12th	Time Spent (Hours)	Time Opened
Average	62.9	63	1	17

The average marks in both class 10th and class 12th are relatively similar, with class 12th marks slightly higher. This suggests that, on average, students in this category maintain a consistent level of academic performance from class 10th to class 12th.

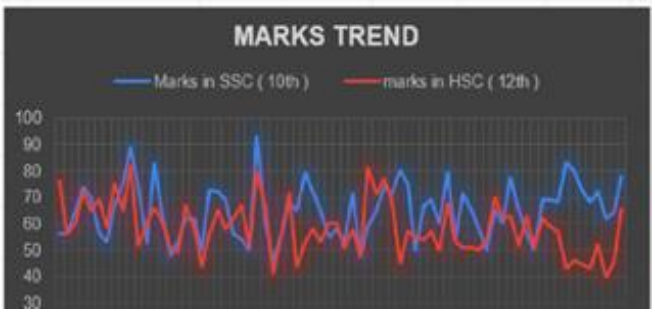

Figure 1: Marks trend (category 1)

6.2 Category:2

In Category 2, comprising students who dedicate 1-3 hours to short video consumption, our research reveals a nuanced relationship between their digital media habits and academic performance. On average, these students spend approximately 2.14 hours watching short videos and open them around 30 times. In their 10th-grade examinations, they achieve an average score of 64.97, which is slightly higher than Category 1 students. However, in their 12th-grade exams, their average marks drop to 58.41, indicating a decline in performance.

Table 2: Category 2 specifications

	Marks in 10th	Marks in 12th	Time Spent (Hours)	Time Opened
AVERAGE	64.97	58.41	2.14	30
Correlation	0.03921	-0.0882		

Correlation analyses were conducted to scrutinize this relationship further. Surprisingly, a weak positive correlation of 0.0392 ,Conversely, a weak negative correlation of -0.088 was observed between time spent on short videos and class 12th marks, indicating that as students devote more time to short videos, their 12th-grade marks tend to decrease modestly .

Figure 2: Marks trend (category 2)

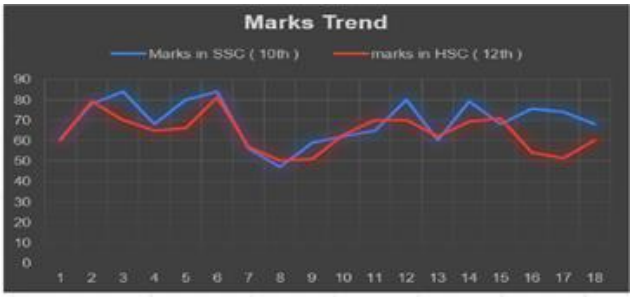

Figure 3: Predicted marks in 12th (Category 2)

The linear regression analysis shows a downward trend for class 12th predicted marks. This means that as students spend more time on short videos, their predicted marks for the 12th-grade examinations tend to decrease. This finding aligns with the negative correlation coefficient (-0.088) observed earlier, indicating a modest negative relationship between time spent on short videos and class 12th marks

6.3 Category.3

In Category 3, which comprises students who invest more than 4 hours in short video consumption, the research findings reveals that

Table 3: Category 3 specifications

	Marks in 10th	Marks in 12th	Time Spent (Hours)	Time Opened
AVERAGE	69.3	63.9	5.43	44
Correlation	0.2304	-0.3217		

On average, students in this category achieve impressive marks in their 10th-grade examinations, with an average score of 69.3. This demonstrates that in the early stages of their education, these students excel one of the main reason was that they were not exposed to short videos (Revealed in interview)

As these students progress to their 12th-grade exams, their average marks decrease to 63.9. This indicates a notable decline in academic performance as they advance to the later stage of their education. Students in this category invest an extensive amount of time in short video consumption, dedicating an average of 5.43 hours to these platforms

This represents a significant commitment to digital media engagement. Furthermore, they exhibit a high frequency of short video access, opening these videos approximately 44 times on average. This suggests a frequent and intensive interaction with short video content

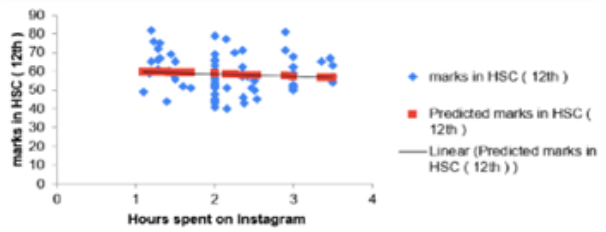

Figure 4: Marks trend (category 3)

Correlation analyses were conducted to examine the relationship between time spent on short videos and academic performance

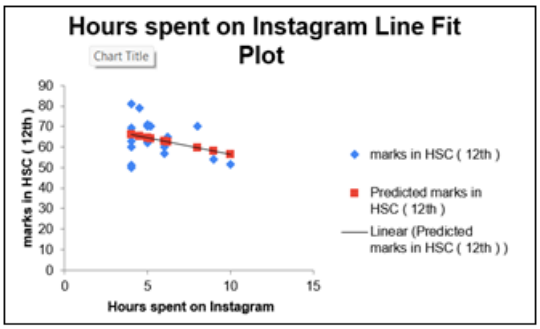

Figure 5: Predicted marks in 12th (Category 3)

The correlation coefficient for class 10th marks and time spent on short videos is 0.2304, indicating a moderate positive correlation. This means that, in class 10th, there is a substantial positive association between the time these students allocate to short videos and their academic performance.

Conversely, the correlation between class 12th marks and time spent on short videos is -0.3217, signifying a moderate negative correlation. In class 12th, longer engagement with short videos is linked to a considerable decline in academic performance

For students in Category 3, who invest more than 4 hours in short video consumption, the linear regression analysis indicates a significantly downward trend in their predicted class 12th marks. This implies that, on average, as these students allocate more time to short videos, their predicted marks for the 12th-grade examinations tend to decrease notably.

These findings for Category 3 underscore a complex relationship between short video consumption and academic performance. While these students excel in the early stages of their education, their academic performance declines significantly as they start spending more times on short videos.

6.4 Qualitative data analysis

To comprehensively assess the attention span of the participants in our research, we employed a multifaceted approach that included both qualitative data collection methods, namely interviews and surveys via questionnaires. These methods allowed us to gain rich insights into the participants' attentional behaviors , perceptions, and experiences concerning their engagement with short videos

Questionnaire-based data collection

We engaged with a diverse pool of 200 respondents through questionnaires to gain insights into their personal experiences and challenges associated with short video consumption. Through a series of carefully crafted questions, we probed respondents about the specific problems they encounter while engaging with short videos. These questionnaires provided us with a wealth of valuable data, enabling us to understand the subjective aspects of attention span and the multifaceted challenges posed by short video platforms. Following are the thematic analysis of the survey questionnaires

Lack of Focus: A significant subset of respondents reported experiencing a diminished ability to focus as a consequence of engaging with short videos. Phrases such as "Can't focus" and "Sometimes can't focus" were recurrent in their remarks, indicating a perceived challenge in maintaining concentration and attention.

Productivity Impact: The notion of reduced productivity surfaced, with participants describing feelings of unproductivity, stating "Nothing" and highlighting their struggles with concentration, which they attributed to excessive short video consumption

Negative Impact on Brain: Several participants voiced concerns about the detrimental effects on their cognitive faculties, describing the impact as "Very bad" on the human brain. This theme underscores the potential cognitive consequences of prolonged engagement with short video content.

Addiction: Addiction was a recurring topic, with participants acknowledging that while short videos could be entertaining, they could also become highly addictive. Phrases like "It's very much addictive" and "For fun it is okk but addiction is not good for all" exemplified this sentiment, indicating that some individuals felt compelled to continuously scroll through short videos.

Life Changes: Short video consumption was perceived as a factor contributing to changes in daily routines and habits, with participants noting shifts in patience, discipline, and a heightened urge to check their phones. These alterations underscored the dynamic nature of individuals' daily lives.

Time Management: Concerns related to time management were evident, with participants mentioning time wastage and difficulty in balancing short video consumption with other activities, especially during study sessions.

Waste of Time: A recurrent theme was the perception that short videos often resulted in wasted time. This sentiment was captured in phrases like "Time wastage" and "Waste of time," underscoring concerns about unproductive engagement.

These thematic categories provide a comprehensive understanding of the diverse experiences and perspectives of individuals regarding the impact of short videos on their daily lives. This analysis sheds light on the complex interplay between entertainment, distraction, knowledge acquisition,

and productivity in the context of short video consumption.

In-depth interview

To delve deeper into the experiences of individuals who dedicate more than 4 hours to short video consumption, we conducted in-depth interviews with 10 selected respondents. These interviews allowed us to explore the nuances of their engagement with short videos, uncovering personal anecdotes, motivations, and challenges. Through these qualitative interviews, we gained a richer understanding of how extended short video usage impacts attention span and the potential consequences it may have on academic performance.

Following are the highlight of interview:

1) **Difference in Ability to Concentrate:** This question reveals that 7 out of 10 respondents acknowledge a noticeable difference in their ability to concentrate on academic tasks on days when they've viewed a lot of short videos. This suggests that, for a majority of participants, short video consumption impacts their attention span and academic focus.
2) **Duration of Focus:** With 7 out of 10 respondents reporting that they can't focus for extended periods without getting distracted, it indicates a common challenge in maintaining concentration. Short video usage appears to affect their ability to sustain attention on tasks.
3) **Retention of Information:** The finding that 8 out of 10 respondents have difficulty recalling information from short videos underscores the impact on memory retention. This supports the idea that short videos may hinder the retention of knowledge or information.
4) **Impact on Enjoyment of Longer Content**: All 10 respondents highlighting that short videos impact their satisfaction with longer content, such as movies, books, or lectures, indicates a preference for shorter, easily digestible content. This shift in consumption patterns may be linked to attention span and the desire for instant gratification
5) **Remembering Appointments and Obligations**: All 10 respondents reporting difficulties in remembering appointments or obligations suggests that short video consumption may lead to lapses in organizational skills and memory, potentially affecting daily responsibilities.
6) **Avoiding or Delaying Tasks:** The revelation that 9 out of 10 respondents often delay starting tasks requiring deep thought implies procrastination tendencies. This procrastination could be linked to short video distractions.
7) **Difficulty Concentrating on Verbal Communication:** The observation that 7 respondents have difficulty concentrating on verbal communication highlights potential issues in active listening and maintaining attention during conversations.
8) **Distraction by Activity or Noise:** The agreement of 9 respondents that they are often distracted by surrounding activity or noise reinforces the idea that short video usage may lead to heightened distractibility.
9) **Changes in Focus Duration:** All respondents noting that they find it harder to maintain focus on tasks for extended periods compared to a few years ago signifies a perceived change in their attention span. Short video consumption may contribute to this shift.

These interview findings provide qualitative evidence of how short video consumption can impact various aspects of attention span, memory, task management, and overall focus. The responses collectively reflect a trend where short videos may contribute to reduced attention span and increased distractibility, potentially influencing academic and daily life

7. Solution

7.1 Ease of access

Dopamine is a neurotransmitter connected to motivation and reward. When we anticipate a rewarding activity, our dopamine levels rise, generating excitement and happiness. This is a normal and healthy process. However, problems arise when dopamine drops below baseline levels after receiving a reward, creating a Chronic Dopamine Deficit State. In this state, we can't experience pleasure and happiness as intensely, leading us to seek more stimuli for the same effect.

This concept applies to cigarettes,drugs and even short videos. Short videos are easily accessible and offering quick rewards, continuously stimulate our brains. As we receive constant rewards in short bursts, our attention span is impacted, making it challenging to focus on other tasks that don't provide immediate gratification.

To tackle this problem following Steps can be taken:

1) *Delete the Apps*: Remove short video apps from your phone (You can still you it in your browser) This reduces ease of access and prompts conscious decisions to use them.
2) *Logout and Secure Passwords*: If you want to keep the apps, regularly log out and create lengthy, complex passwords for them, making access less convenient.
3) *Awareness of Triggers*: Identify triggers that lead to app use, such as boredom, and actively avoid these situations.
4) *Engage in Alternative Activities*: Replace short video consumption with activities like exercise, puzzles, meditation, or music to boost concentration, attention, and mental sharpness.
5) *Social Interaction*: Interact with people to improve communication and listening skills, reducing reliance on short videos for social connection.

7.2 Educational Awareness Campaigns:

Implementing educational campaigns is a vital strategy to address the impact of excessive short video consumption on attention span and academic performance. These campaigns should target three key audiences: students, educators, and parents. Here's how these campaigns can be structured:

Students: Conduct workshops or seminars for students, both in schools and online, focusing on digital literacy. Teach them to recognize the potential consequences of excessive short video consumption on their academic performance and overall well-being.

Educators: Offer professional development for educators to understand short video challenges and equip them with classroom strategies, including recommending monitoring tools to track student screen time and offer guidance when necessary.

Parents: Parenting Workshops: Organize workshops and webinars for parents to inform them about the effects of short video consumption on attention span and academic performance. Equip them with practical strategies for managing their children's screen time.

7.3 Digital Wellbeing Tools for Managing Screen Time

Promoting digital wellbeing tools and applications is a practical strategy to help students monitor and manage their screen time, including their engagement with short videos. These tools are designed to empower individuals to make informed choices about their digital consumption habits and foster a healthier relationship with technology. Digital wellbeing tools offer a range of features to help users manage their screen time effectively. They enable the tracking of app and activity usage, providing valuable insights into screen time patterns. Users can set limits on specific apps to prevent excessive use and employ focus modes that block distracting notifications during work or study sessions. Bedtime features promote healthier sleep habits by reducing screen brightness and notifications at night. Customizable app notifications help minimize interruptions, while usage insights empower individuals to make informed decisions about reducing their screen time and fostering a healthier digital balance.

Examples of Digital Wellbeing Applications:

1) *Apple Screen Time (iOS):* Apple's Screen Time feature, available on iOS devices, offers detailed insights into app usage, allows users to set app limits, and provides a daily summary of screen time.
2) *Google Digital Wellbeing (Android):* Google's Digital Wellbeing provides similar features for Android users, including app timers and a dashboard to track screen time.
3) *Forest: Stay Focused (iOS and Android):* This app allows users to "grow" virtual trees while focusing on tasks. If they leave the app to use distracting apps, their tree withers, encouraging them to stay on track.
4) *Freedom (iOS and Android):* Freedom blocks access to selected websites and apps for set periods, helping users maintain their attention span during work or study sessions.
5) *StayFree (Android):* StayFree offers a detailed analysis of app usage and enables users to set usage limits for individual apps.
6) *Calm (iOS and Android):* While primarily a meditation and relaxation app,Calm includes tools to track and manage screen time, encouraging mindful tech usage.

By implementing these solutions, we can work towards mitigating the negative effects of short video consumption on attention span and academic performance, fostering a more balanced and focused digital_lifestyle for students

8. Limitations

The limitations of this research stem from budgetary constraints, which prevented the acquisition of advanced technology for directly assessing students' attention spans, the absence of advanced technology limited the exploration of certain technology-related variables

9. Conclusion

In this research, we embarked on an exploration of the influence of short videos on attention span and its consequential impact on academic performance. Through a blend of quantitative and qualitative methodologies, we uncovered essential insights that shed light on the complex relationship between students' engagement with short videos and their educational outcomes. Our quantitative analysis, drawing from responses of over 200 students, unveiled a concerning trend. As the time spent on short videos increased, academic performance, particularly in 12th-grade assessments, exhibited a noteworthy decline. This statistical correlation signifies the tangible repercussions of excessive short video consumption on academic achievements.

In parallel, our qualitative investigation, comprising interviews with 10 students spending more than 4 hours on short videos, provided a profound understanding of the subjective experiences. These students reported difficulties in concentration, retention of information, and a preference for instant gratification over longer content. These qualitative findings align with the quantitative data, reaffirming the adverse influence of short videos on attention span and academic focus.

To address these challenges, we proposed a multifaceted solution. Firstly, we emphasized the need to reduce ease of access by deleting apps, logging out regularly, and identifying triggers for short video usage. Secondly, we advocated for educational awareness campaigns targeting students, educators, and parents to promote digital responsibility and provide practical strategies. Lastly, we recommended the use of digital wellbeing tools to help students manage their screen time effectively.

This research highlights the undeniable impact of short video consumption on attention span and academic performance among students. It underscores the urgency of addressing this issue through a combination of individual actions, educational initiatives, and digital tools. By adopting these strategies, we can empower students to strike a balance between digital engagement and academic success, fostering a more focused and resilient generation in the digital age.

Acknowledgment
The authors would like to express their deep gratitude to their research supervisor, **Professor Sanjana Salunke**, for her invaluable feedback and mentorship throughout this research project. Her expertise and guidance were instrumental in shaping the direction of this work and ensuring its quality. We are particularly grateful for her insightful comments on the methodology and assistance in navigating research hurdles We are fortunate to have had her support and are incredibly thankful for her contribution to this research.

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