



PERCEIVED SOCIAL MEDIA USAGE ON COGNITIVE FUNCTIONS OF THE SYOUTH: IMPLICATIONS FOR POLICY DIRECTIONS IN MANAGEMENT OF DIGITAL LEARNING

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Abstract

Descriptive survey research design was used for the study population of the study was 42,000 and the sample of 279 under graduate students of University of Nigeria was determined with Cohen, Manion and Morrison (2007) which indicates that when the population ranges in 30,000 and above at 95 percent confidence level and interval, a sample of 379 should be used. Based on this, the sample size of 400 will be deemed appropriate to compensate for incomplete responses. The sample was selected by means of random sampling technique of balloting without replacement. The instrument for data collection was questionnaire on social media usage in cognitive functions (QSMUCF). The instrument assessed intensity frequency and duration of usage of WhatsApp and Facebook. The instrument consisted of two sections A & B. section "A" contains items that elicited information on personal data of the respondents. Section B contained the adapted e(QSMUCF) items. Cronbach Alpha statistics were used to determine reliability coefficient of the adapted (QSMUCF) which gave 0.70. Standard deviation will be used to answer the research questions. The findings of this study are summarized as follows:

- 1. Showed that the aggregate mean value of 3.14 is within the categorization of high extent. Therefore, WhatsApp usage affect cognitive function of youths to a high extent.*
- 2. Data on table 2 showed that the aggregate mean value of 2.99 is within the categorization of high extent. Therefore, facebook usage affect cognitive function of youths to a high extent.*

Based on the findings of this study, the following recommendations were made:

- 1. The service providers should not register youths who are still students into the platforms in order to avoid impaired cognitive functions arising from WhatsApp usage.*
- 2. The parents should consistently monitor and supervise youths' facebook content usage in order to enhance their cognitive functions.*

Introduction

Young people are the driving force of connectivity globally, with 75% of 15 to 24 year olds online in 2022, compared with 65% for the rest of the world's population. Children are also spending more time online than ever before. Around the world, a child goes online for the first time every half a second. United Nations (2023). For fear of missing out, known (FOMO), which is a Psychological Phenomenon where an individual experiences anxiety over the possibility of missing out on something important, and for online users, they become constantly occupied with what others are doing online and feel unable to log off in case they are missing out. In the youth, adolescence, smartphone use in general and social media use is particular is very common (Stieger and Wounderl 2022).

Social media, permeate our society, with several social networking sites (SNS) or platform; Facebook, Twitter, LinkedIn, Whatsapp, Pinterest, Instagram, Snapchat for communicating with one another and with billions of people that surf social media. Nevertheless, past researches seem to be restricted in several aspects. According to Stieger and Landsteiner (2022), many studies have focused on well-being satisfaction with life, loneliness, addiction, and depression among others, but not as much constructs, such as fundamental cognitive abilities and skills (e.g, attention, concentration, memory, intelligence, information processing spatial perception among others), have been considered. Many of these studies also recognize the need for further research to address other aspects of social media use, apart from emotional or behavioural outcomes. Therefore, it is likely



that the peak of potential problematic use has been reached as yet (Twenge et al, 2018). Though there is much benefit in the use of social media, but it is of utmost importance that the youth must be lead to use it with ultimate responsibility.

Social media refers to the means of interactions among people in which they create, share, and/or exchange information and ideas in virtual communities and networks. (Tufts University 2023). Social media is about conversations, connecting with the audience and building relationships. According to Dollarhide (2023), it is a digital technology that allows the sharing of ideas and information, including texts and visuals, through virtual networks and communities. Social media typically features user-generated content that lends itself to engagement via likes, shares, comments, and discussion. It is worthy to note that in the past 20 years, social media has developed into one of the most popular forms of information-consuming platforms in the world (Zhuang et al; 2017), as in the early days of internet, social media, communication was typically unidirectional and often time-staggered, that is, real-time communication was rarely possible. Since then, however, social media, also known as internet-mediated communication (Stieger and wonderl 2022), has become so fast that it is possible to communicate with people worldwide with only very small time delays, so much so that we do not truly see much differences compared with face to face communication. To this effect, many social networking sites or platforms started springing up. A social networking site is an online platform that allows users to create a public profile and interact with other users.

Social networking sites usually allow a new user to provide a list of people with whom they share a connection, and then allow the people on the list to confirm or deny the connection. Meshi, Tamir, and Heekeren, (2015), noted that in the united states, 74% of online adults use social networking sites such as Facebook, Twitter, LinkedIn, Pinterest, and Instagram. However it is worthy to note that SNS and social media are used interchangeably as Dollarhide (2023), explained that social media refers to a variety of technologies that facilitate the sharing of ideas and information among their users and the same could be said of social networking sites from Facebook (that has the highest population of users, above 1.5 million, Instagram, Twitter and Youtube and many other SNS platforms. Data Reportal, (2023) reported that more than 4.7 billion people use Social media, equal to roughly 60% of the web index 2023, in early 2023, 94.8% of users accessing chatting and messaging apps and websites, followed closely by social platforms, with 94.6% of users. There are many other SNS, or platforms such as reddit, tiktok, discord, wechat, messenger, twitch, club house QQkwai, for communicating with one another.

Social media and social networking sites have then become increasingly popular among the youth in recent years, and this could be attributed to the ease of access to technology and the internet, as well as the appeal of connecting with friends and peers online. Young people are often drawn to social media and social networking sites because they offer a platform for self-expression and social interaction. These platforms allow young people to share their thoughts, opinions, and experiences with others, as well as connect with like-minded individuals who share similar interests and experiences.

Youth is the period between childhood and adult age. It is the early period of existence, growth, or development. The united nations for statistical purposes, defines youth, as those persons between the ages of 15 and 24 years, without predudice to other definitions by member state, because some united nation member states, extend theirs to 35 years e.g The African youth charter. (UN 2006). Definition of youth perhaps changes with circumstances, especially with the changes in demographic, financial, economic and socio-cultural settings. However, the definition that uses 15-24 age cohort as youth fairly serves its statistical purposes. For assessing the needs of the young people and providing guidelines for youth development. For the purpose of this study, it is necessary to also put to consideration, the age range of adolescent, which is 10-19. Young people, 10-24, and youth 15-24 WHO/UNICEF/UNFPA as some researchers have noted Stieger and Wunderl (2022), have noted that in adolescence, smartphone use in general and social media use in particular has often been associated with negative effects, such as higher anxiety levels and body dissatisfaction. The pew research center conducted a survey in 2018 and found that 95% of teenagers aged 13-17 have access to a smart phone, and 45% say they are online "almost constantly". The report also found that Youtube, Facebook, Instagram and Snapchat are the most



popular social media platform among teens, with Facebook being the highest, with up to 1.5 billion users. A study published in the *Journal of Adolescent Health* in 2020 found among others, that social media usage is extremely common among adolescents, with the majority of participants reporting daily use of social media platforms such as Facebook, Instagram, and Snapchat. This study also found that social media use was associated with increased risk of cyberbullying, victimization and perpetration, as well as increased risk of mental health problems such as depression and anxiety. A study published in the *Journal of computer mediated communication* in (2018) found that social media use is associated with increased feelings of social connectedness among young adults. The study also found that social media use was associated with increased exposure to diverse perspectives and increased engagement in civic and political activities

Overall, these studies and reports provide evidence that young people, adolescents are highly inclined to social media, with the majorities of teenagers reporting daily social media usage can have both positive and negative effects on young people's well-being, it is clear that social media is an important part of young people's lives and plays a significant role in their social interactions and online behaviour. At this juncture, one may wonder what attracts the youth to intense and excessive use of the social media and Kennedy (2021), noted cyberbullying, sexting, online harassment and extensive use of social media platforms have been described as increasingly prevalent. Researchers O' Keefe and Clarke-Pearson (2011), Wiediehold (2018) keep raising important questions, especially for children, adolescents and young people, who intensively use internet based social media application such as Twitter, Facebook, Instagram, or Youtube among others. It is then clear that there could be some aspect of rewards that entice the youth to frequenting the social media. Though social media, has a plethora of benefits to users, on the other hand, young people may find themselves using it excessively as Meshi et al; (2015), noted that the social media provide a platform where the modern human can attempt to satisfy social needs, via some key behaviours, and that these behaviours rely primarily on three domains which are: social reward processing, social cognition (i.e mentalizing) and self-referential cognition. Social media provides a platform for people to satisfy these fundamental social drives, specifically, social media allow us to connect with others and groom our reputation via at least five key behaviours: (i) users broadcast information (e.g text, pictures, links, videos among others), users can share information that is personal (e.g vacation photos (ii) users receive feedback on broadcast information (iii) users observe information broadcast by others, (iv) users provide feedback on others posts and (v) users engage in social comparison, by contrasting their own broadcasts and feed back to others.

The fourth as other users, get highly attracted to these reward. The issue is being able to apply enough control in the use of the social media, in order not to get to excessive or very intensive level. This situation may be explained by the fact that the frontal lobe is not fully developed until about age 25 and always seek for comfort and reward. This is why in early years of childhood, the growth and development of the frontal lobe can be monitored to have the ability to complete tasks as directed and without distraction (UPMC HEALTH BEAT, 2022). Imbalance between the gradual development of the prefrontal cortex, which, among other thing, supports self control, and the more rapidly developing limbic systems which in turn, governs appetite and pleasure-seeking, helps to explain why young people are prone to seek novelty and take risks. The prefrontal cortex performs reasoning, planning, judgment and impulse control, necessities for being an adult, without the fully developed prefrontal cortex, a teen might make poor decisions and lack the inability to discern whether a situation is safe. (paradigm treatment, 2021). Furthermore, according to Meshi et. Al; (2015), social media provide users with a consistent supply of social rewards, with each and every suggestion of social connection, or reputation enhancement for example, Facebook users can receive positive feedback in the form of a like; or social connections in the form of a friend request. Even animalistic cues of social success such as these, may activate our brain's reward system, and keep one coming back to Facebook for more. The youth with their young brain, naturally seeking for excitements, excessive are intensive use of the social being and possible addiction to social media. There are also many social media benefits that can attract the youth regularly to it as social media enable people to create and share information, ideas, interests and many other things by forming online social communities and networks. So according to Gorhe (2019), there are many positive effects associated with the social media use amongst students related to their academics. He went further to state that students can connect with various educational groups related to their field of study to social media and easily access all the

important and authentic information shared by others. They can also share some good information they found out on such groups, which in turn will boost their confidence and this can help in the learning process. Others are creativity, enhanced communication, feelings of happiness and emotional support. This could explain why many studies are restricted and focused mainly on well-being, satisfactory with life, loneliness and depression, but not other constructs, such as fundamental cognitive abilities and skills (e.g intelligence, information processing, spatial perception for exception (Walsh et al., 2020). Social media use and its effect on mood have been well researched. However, social media use and its effects on cognition are not as well known (Lara and Bokoch 2021). Similarly, it is recognized that across fields such as Psychology, economics, marketing, communication, and sociology have begun using social media in their investigation. Across all fields of inquiry, however, researchers have only just scratched the surface of harnessing social media for insights into human cognitive processor. The field neuroscience seems to be particularly behind these times. (Bercovici 2010, Wilso, et al 2012 and Mauri, et al. 2011). Researchers have noted that neuroscientists are now beginning to capitalize on the ubiquity of social media use to gain novel insights about social cognitive process and suggest approaches neuroscientists can use to conduct research with social media; social motives that drive people to use social media, neural systems supporting social media use, and approaches neuroscientists can use to conduct research with social media (Meshi et al; 2015).

There are much benefits to the use of social media, both for the young people and the adults such as communicating with friends, wider rich out to the public, academic pursuit, learning of any sort, many individuals will still share anecdotally, that social media is affecting them and their cognitive function. Edmunds (2020), ran a poll on his Instagram recently and 95% of those who answered thought that social media affects cognition which implies poorer concentration, reduced productivity, or a shorter attention span. Concentration productivity and attention span to multiple cognitive domains that are responsible for many behaviours, actions, and skill that we perform daily without even thinking about it. These domains include social cognition, executive function, memory, attention and Psycho-motor speed. (Cambridge cognition, 2015). This area of starch is conclusive in conducive, and some researchers suggest need for further investigation in their studies (Gonidis and Sharma 2017).

There may be need for appropriate leadership to influence the youth better on the best approach the navigate the social media. In fact, growing up with digital technology may be changing the young people brain development in ways we may not know, and these changes may, in turn, change how teens relate to technology. Leadership is a way of influencing a subject to achieve objectives. Perhaps, we would all benefit if we held a little move apprehension towards social media and the unknown impact it may be having on our brain health, especially the young people.

Purposes of the Study

1. Find out the extent WhatsApps usage affects cognitive functions of youth
2. Find out the extent Facebook usage affects cognitive functions of youth

Research Questions

1. To what extent does WhatsApp usage affect cognitive function of youth
2. To what extent does Facebook usage affect cognitive function of youth

METHODOLOGY

Descriptive survey research design was used for the study population of the study was 42,000 and a sample of 279 under graduate students of University of Nigeria was determined with Cohen, Manion and Morrisison (2007) which indicates that when the population ranges in 30,000 and above at 95 percent confidence level and interval, a sample of 379 should be used. Based on this, the sample size of 400 will be deemed appropriate to compensate



for incomplete responses. The sample was selected by means of random sampling technique of balloting without replacement. The instrument for data collection was questionnaire on social media usage in cognitive functions (QSMUCF). The instrument assessed intensity frequency and duration of usage of WhatsApp and Facebook. The instrument consisted of two sections A & B. section "A" contains items that elicited information on personal data of the respondents. Section B contained the adapted (QSMUCF) items. Cronbach Alpha statistics was used to determine reliability coefficient of the adapted (QSMUCF) which gave 0.70. Standard deviation was used to answer the research questions, to summarize the data and identify patterns or trends.

Results

Research question 1: To what extent does WhatsApp usage affect cognitive function of youths?

Table 1: mean and standard deviation scores on the extent WhatsApp usage affect cognitive function of youths

s/n	Items	Mean	Std	Decision
1	How long have you been using WhatsApp	3.06	.48	High Extent
2	On average, how many messages do you send and receive on WhatsApp per day?	3.08	.49	High Extent
3	Do you feel that you are addicted to using WhatsApp	3.25	.49	High Extent
4	How often do you check your phone for new WhatsApp message?	3.09	.47	High Extent
5	Do you feel that using WhatsApp has a negative impact on your ability to concentrate on task?	3.11	.38	High Extent
6	How often do you find yourself multitasking between WhatsApp and other apps or task?	3.13	.49	High Extent
7	Do you feel that your use of WhatsApp has decreased your attention span?	3.14	.67	High Extent
8	Have ever missed an important deadline or appointment because you were distracted by WhatsApp?	3.15	.73	High Extent
9	Do you feel that your use of WhatsApp has affected your ability to retain information?	3.31	.57	High Extent
10	How often do you feel compelled to respond to WhatsApp messages immediately, even if you are engaged in other activities?	3.07	.54	High Extent
Aggregate mean		3.14		
1.00 – 1.74 (Very Low Extent), 1.75 – 2.49 (Low Extent), 2.50 – 3.24 (High Extent), 3.25 – 4.00 (Very High Extent)				

Data on table 1 shows that the aggregate mean value of 3.14 is within the categorization of high extent. Therefore, WhatsApp usage affects cognitive function of youths to a high extent.

Research question 2: To what extent does Facebook usage affect cognitive function of youths

Table 2: Mean and standard deviation scores on the extent Facebook usage affect cognitive function of youths

s/n	Items	Mean	Std	Decision
11	How many hours per day do you spend using facebook	High 2.79	.54	Extent family?
12	How much do you rely on facebook to stay connected with friends and Extent	High 2.86	.65	



13	How often do you find yourself distracted by facebook notifications while on a task that requires concentration	High	2.93	.81	Extent
14	Do you feel that using facebook has a negative impact on your ability to concentrate on tasks	High	2.92	.30	to
15	How often do you find yourself scrolling through facebook mindlessly without a specific purpose or goal	High	3.23	.55	Extent
16	Do you feel that your use of facebook has decreased your attention span?	High	2.88	.49	
17	Have you ever missed an important deadline because you were by facebook	High	3.07	.52	distracted
18	Do you feel that your use of facebook has affected your ability to retain information?	High	2.99	.39	
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19	How often do you feel compelled to check facebook even if you are engaged in other activities?	High	3.11	.64	Extent
20	Have you ever experienced feelings of anxiety or depression as a result of using facebook?	High	3.07	.28	
Aggregate mean			2.99		

1.0 – 1.74 (Very Low Extent), 1.75 – 2.49 (Low Extent), 2.50 – 3.24 (High Extent), 3.25 – 4.00 (Very High Extent)

Data on table 2 shows that the aggregate mean value of 2.99 is within the categorization of high extent. Therefore, facebook usage affect cognitive function of youths to a high extent.

Summary of Findings

The findings of this study are summarized as follows:

1. Shows that the aggregate mean value of 3.14 is within the categorization of high extent. Therefore, WhatsApp usage affects cognitive function of youths to a high extent.
2. Data on table 2 shows that the aggregate mean value of 2.99 is within the categorization of high extent. Therefore, facebook usage affect cognitive function of youths to a high extent.

Discussion of Findings

WhatsApp usage and cognitive function of youths

The study revealed WhatsApp usage affect cognitive function of youths to a high extent. This result may be as a result of the fact that WhastApps content if not regulated can occupy the critical and reflective thinking ability of the youths which can affect them in the near future. Constant use of WhatsApp can impair and impend cognitive functioning needed for serious and focused academic activities. The findings of this study buttressed that of Edmunds (2020) which ran a poll and discovered that social media affects cognition which implies poorer concentration reduced productivity, or a shorter attention span. Furthermore, the finding of this study is in agreement with that of Cambridge cognition, (2015) which revealed that social media can affect domains such as social cognition, executive function, memory, attention and Psycho-motor speed of an individual.



Facebook usage and cognitive function of youths

The study also revealed that Facebook usage affect cognitive function of youths to a high extent. The possible reason why Facebook interferes with cognitive functions of youths could be because it provides them with sundry of distracting contents which captures their attention reducing emphasis on cognitive ability development. The finding of this study is consistent with that of Kennedy (2021) which revealed that the prevalence of social media has affected the academic enterprise of students.

Conclusion

Based on the findings of this study, it was concluded that social media usage can impact on the cognitive functions of youths to a high extent. Specifically, the study has empirically shown that Whatsapp and Facebook are factors that can affect cognitive functions of youths to a high extent.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. The service providers should not register youths who are still students into the platforms in order to avoid impaired cognitive functions arising from WhatsApp usage.
2. The parents should consistently monitor and supervise youths' facebook content usage in order to enhance their cognitive functions.

Continuation of the Brief Synopsis

The research findings

- WhatsApp usage affects the cognitive functions of youth to a high extent.
- Facebook usage affects the cognitive functions of youths to a high extent.

Recommendations

Based on the findings of this study, the following recommendations were made:

- The service providers should not register youths who are still students into the platforms in order to avoid impaired cognitive functions arising from WhatsApp usage.
- The parents should consistently monitor and supervise youths' facebook content usage in order to enhance their cognitive functions.
- Emphasizing the importance of face-to-face interactions and building real-life relationships. Encouraging young people to engage in offline activities, hobbies, and socializing with friends and family. Helping them understand that social media should complement their offline lives rather than replace them.

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