Effects (Physical, Behavioural and Psycho-social) of using Mobile Phones and other Devices with Internet Accessibility by Children

A Study by the National Commission for Protection of Child Rights (NCPCR)

Administered by: Rambhau Mhalgi Prabodhini (RMP)

JULY - 2021

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NCPCR

Message from Chairperson's Desk

It gives me great pleasure to present this research on **Effects (Physical, Behavioural, and Psycho-social) of Use of Mobile Phones & Other Devices with Internet on Children** to all the stakeholders and readers.

National Commission for Protection of Child Rights (NCPCR) is a statutory body constituted under Section 3 of the Commission for Protection of Child Rights (CPCR) Act, 2005 to protect the child rights and other related matters in the Country. Commission's main emphasis is on the principle of universality and inviolability of child rights and recognition of the tone of urgency in all child related policies of the country. Keeping the Commission's mandate in focus, NCPCR has commissioned this research study with Rambhau Mhalgi Prabodhini (RMP)to understand physical, behavioural, and psycho-social effects on children of using mobile phones and other devices with internet accessibility.

Relevance and importance of this study becomes even more significant in the current circumstances of an on-going global pandemic, as it has caused many disruptions in the delivery of quality education and curtailed physical engagement. Use of mobiles and Internet, among children, has anyway become common place even otherwise but for the COVID-19 crisis, such use by children, for educational and recreational purposes, has accelerated rapidly. We at the Commission believe that '*every right the child enjoys is seen as mutually-reinforcing and interdependent.*' The rights to quality education and holistic development of children cannot be ignored in these circumstances of the pandemic. Hence, the worth of this study becomes significant in the context of this pandemic.

I would like to express my sincere gratitude to Parliamentary Standing Committee for suggesting this important topic for research study. I would like to congratulate the research team of Rambhau Mhalgi Prabodhini (RMP) who has put in great effort in conducting this research and in compiling the report. I would like to thank and acknowledge the support and cooperation received from Members of the Commission, Shri. Yashwant Jain, Smt. Pragna Parande, Dr. R.G.Anand, Ms. Rosy Taba and especially Ms. Rupali Banerjee Singh, Member Secretary, NCPCR for the research study.

A special thanks to Dr. Shekhar P. Seahadri, Director, NIMHANS and Dr. Rajesh Sagar, Professor, Department of Psychiatry, AIIMS for giving their inputs in recommendation part of the research study.

Acknowledgement to Ms. Shaista K Shah, Sr. Technical Expert, (Health & Psychology), NCPCR for providing technical support and inputs for the research study.

THANK YOU, JAI HIND

Priyank Kanoongo
Chairperson, NCPCR

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Preface

The on-set of the Covid-19 pandemic has brought about many transformations in our day-to-day functioning and work life. It has exacerbated many issues, for our current socially distanced lives, the dependence on information and communication technology has grown manifold. This dependence is even more concerning with regards to the children, for whom all means of education and recreation have got subsumed in the digital medium, as the pandemic has restricted physical classroom teaching and mobility of children. The need and necessity of digital access and infrastructure has been made even more evident by the current scenario, which, in turn, is a vindication for the push for a *Digital India* by the current dispensation.

As the use of digital devices by our children accelerates, there emerges the need to study its impact on their development and its associated health hazards. Hence, to understand physical, behavioural, and psycho-social effects on children from using mobile phones and other devices with internet accessibility, the National Commission for Protection of Child Rights (NCPCR) has sanctioned this research study.

The administration and execution of the study has been undertaken by RambhauMhalgiPrabodhini (RMP). Established in 1982 as an NGO and headquartered in Mumbai, RMP is a unique research and training institute engaged in capacity building, public awakening, and research towards contributing to nation building. Initially Established as a unique training and research academy, over the years it has blossomed into a multi-dimensional institute. This report, compiled by RMP, will be of interest to academicians, policy-makers, domain-experts and students, who are all invited to explore and examine it, at length.

रवींद्र माधव साठे

Ravindra Sathe
Director General, RMP

Acknowledgement

This research report is a result of hours of dedicated effort and endeavour of many people. The National Commission for Protection of Child Rights (NCPCR) deserves all the credit for envisioning the need and importance of such a research study. We would like to extend our gratitude to the Commission for partnering with Rambhau Mhalgi Prabodhini (RMP) in conducting this crucial study. We would also like to thank all the school associations, like Kendriya Vidyalaya Sangathan, Vidya Bharti Akhil Bhartiya Shiksha Sansthan, and individual schools, from across the country, which participated in the study. (A detailed list of all schools is provided in Appendix D.)

Every person involved in the research put in their very best and this report would not have been achieved without contributions from the following:

Research Advisory Board

Priyank Kanoongo, Chairperson, NCPCR

ShaistaK Shah, Senior Technical Expert, NCPCR

Ravindra Sathe, Director General, RMP

Ravi Pokharna, CEO, RMP

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Mita Nath Bora (North-East)

Pradeep Biradar (West)

Raajnandini Sinha (East)

Shashank Shekhar (East)

We appreciate the contribution of all, including those not mentioned above, who have in any way or form, added to and enriched the findings of this research report.

Ravi Pokharna
Chief Executive Officer, RMP

Introduction

The fourth industrial revolution unleashed internationally and in India has resulted in rapid transformation in the society, as we experience mass proliferation of cellular and mobile devices with hands on internet connectivity. Consequently, mobile phones have become an essential gadget for us in our day-to-day activities, and execution of basic tasks. Now, we use mobile phones not just to remain connected with friends and family, but also for several other utilities like social networking, video games, multimedia, e-commerce, placing online orders for food from choicest neighbourhood eateries and availing taxi services, to name a few. Growing dependence on mobile phones and the exponential rise in the adoption of smartphones, even in countries with mid to low levels of income has triggered global debate on the effects of mobile phones on human health and well-being. Children are potentially more susceptible, as their mind and body are still in the process of development. The addictive nature of smartphones has meant that several psychologists across the world have raised warning flags and presented studies which associate their use with a variety of psycho-pathological symptoms. These include symptoms like sleep disorders (or sleeplessness), shivering, anxiety, irritability, and digestive problems (Billieux 2012)[1]. 'The Programme for International Student Assessment' (PISA) survey, undertaken by the Organisation for Economic Co-operation and Development (OECD) indicated that students who are extreme users of internet devices (more than 6 hours a day) were most likely to have lower life satisfaction and wellbeing (Gottschalk, 2017)[2]. Association between mobile phone use and adverse effects on mental health has also been found in studies that talk about the psychological or behavioural perspective of mobile phone exposure. (Thomée, 2018)[3].

In India there is a general lack of literature which conclusively elaborates on the effects of technologies and the internet on the psycho-social state of children and adolescents. However, it should also be noted that the use and reach of mobile phones among children in India, like elsewhere in the world, is at an all-time high. Unlike any other preceding generations, the present generation of children in India has been growing up with mobiles and smart devices since birth. With the advent of the COVID-19 pandemic, use of information and communication technology tools and video conferencing platforms, to compensate for classroom engagement, has witnessed rapid and widespread acceptance. Use of such devices by children is only going to increase in future.

[1]Billieux, J. (2012). Problematic use of the mobile phone: a literature review and a pathways model. Current Psychiatry Reviews, 8(4), 299-307.

[2] Gottschalk, F. (2019). Impacts of technology use on children: Exploring literature on the brain, cognition and well-being.

[3]Thomée, S. (2018). Mobile phone use and mental health. A review of the research that takes a psychological perspective on exposure. International Journal of Environmental Research and Public Health, 15(12), 2692.

In such ensuing circumstances, the National Commission for Protection of Child Rights (NCPCR) has undertaken a study on 'Effects of Use of Mobile Phone & Other Devices with Internet on School Children'. Following is an analytical report of the pan-India study.

Methodology

The research study was exploratory in nature and made use of quantitative techniques like the survey method, and qualitative techniques like Focused Group Discussion (FGD). The rationale for selecting and constructing a mixed method research design was the degree of breadth and depth of understanding we wanted to document about the proposed study. The data collected through the research design allowed strategic *Triangulation* of outcomes (between qualitative, quantitative, and secondary sources) thereby highlighting convergence, corroboration, correspondence of inferences we got from different methods. *Complementarity* of research outcomes was achieved through the research design as it enabled us to elaborate, illustrate, clarify, and enhance the results from one method by comparing it with the results from the other methods. Using the research methods and design aforementioned, the following research tools were developed;

O Three different questionnaires for survey of all major stakeholders i.e., school children,parents and teachers

O Focused Group Discussions in the form of webinars involving parents and teachers

The data collection plan proceeded from this methodology and approach. The collection of samples followed the technique of stratified random sampling.

Since this was a nationwide study of all regions (East, West, North, South, and North-East regions), 15 locations were selected across India with 3 areas and 1000 respondents per region. Tele-density of wireless subscribers is varied across the three types of areas defined i.e., rural, urban and metropolitan. Tele-density percentage of wireless phones in urban areas is 56 percent and in rural is 43 percent, wherein the metro cities (Delhi, Hyderabad and Mumbai) have tele-density coverage of over 100 percent. Given that the maximum access to wireless phones is in metropolitan areas, followed by urban and rural areas, the distribution of respondents across region has been as follows:

Region/Area Type	Rural	Urban	Metropolitan
North	150	250	600
South	150	250	600
East	150	250	600
West	150	250	600
North-East	150	250	600
		Total	5000

The survey of 1000 stakeholders per region is inclusive of three types of stakeholders as discussed: school children, parents and teachers. The division for the same is done in the following ways:

Stakeholders	Children	Parents	Teachers/SMCs
percent share in every location	60percent	20percent	20percent
Metro	360	120	120
Urban	150	50	50
Rural	90	30	30
Total	600	200	200

According to the research design; one metropolitan city and adjoining urban and rural areas were selected for the purpose of data collection. These cities according to the plan were **Delhi, Hyderabad, Mumbai, Bhubaneswar/Ranchi and Guwahati in North, South, West, East and North-East regions**

respectively [Though Bhubaneswar/Ranchi and Guwahati, are not specified metro cities, they are still the most prominent cities in the East (Odisha/Jharkhand) and the North-East (Assam), hence warranted selection]. In each region, the study targeted to collect data from 12 schools, including six schools in the metropolitan city, four from urban and two from rural. Hence, a total of 60 schools were targeted for the survey. The further break-up of the sample of schools was done in three categories i.e., private high-income schools, budget private schools and government schools. The proposed sampling schools in each region is further explained as follows:

Type of Schools	Metro	Urban	Rural
Private High-Income Schools	2	1	-
Budget Private Schools	3	2	1
Government Schools	1	1	1
Total No. of Schools	6	4	2
Total schools in one region			12

The number of students, parents and teachers sampled at each school is obtained by dividing the sample of schools with the total number of students, parents and teachers to be sampled in a region.

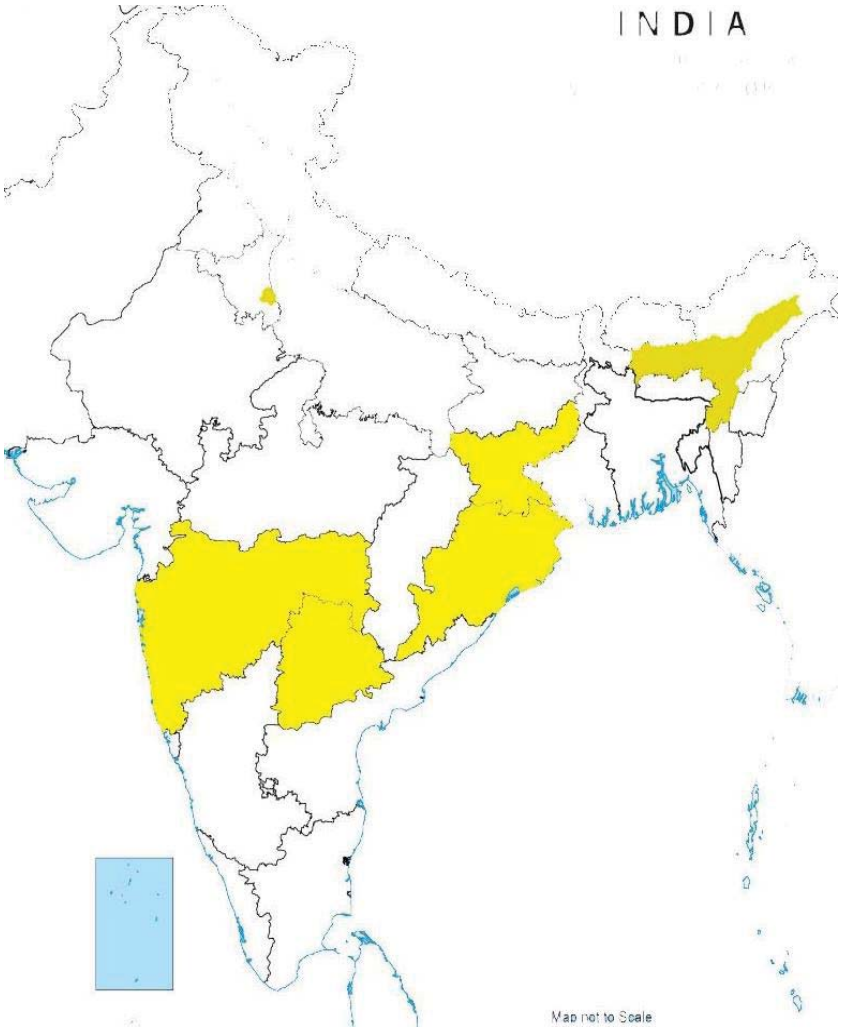


Fig. 1 Representative map of India, highlighting the states from where sampling was done for the study

Webinars cum FGDs

A few images from the online Webinars cum FGDs which were conducted for the study

A total of 10 such webinars were conducted across different schools in the five regions of the study. These webinars were in the form of FGDs and helped in accumulating qualitative data components needed for the study.










Analysis and Results

Analysis of the data collected for the study, selected at random, was done by first cleaning and then processing the data through the SPSS software. Analytical measures used to arrive at the below mentioned inferences include; studying the central tendencies, frequency distributions and bivariate analysis. The sampling included three categories of respondents, as suggested in the methodology, and the total number of responses collected were of **5,811 participants, consisting of 3,491 school going children, 1,534 parents and 786 teachers** from 60 schools, across six states in the country.

Basic Profile of Respondents

The total number of children respondents was 3,491 and of all the valid responses 50.9 percent were male and 49.1 percent female. A good mix of girls and boys, from different regions of the country participated in the study.

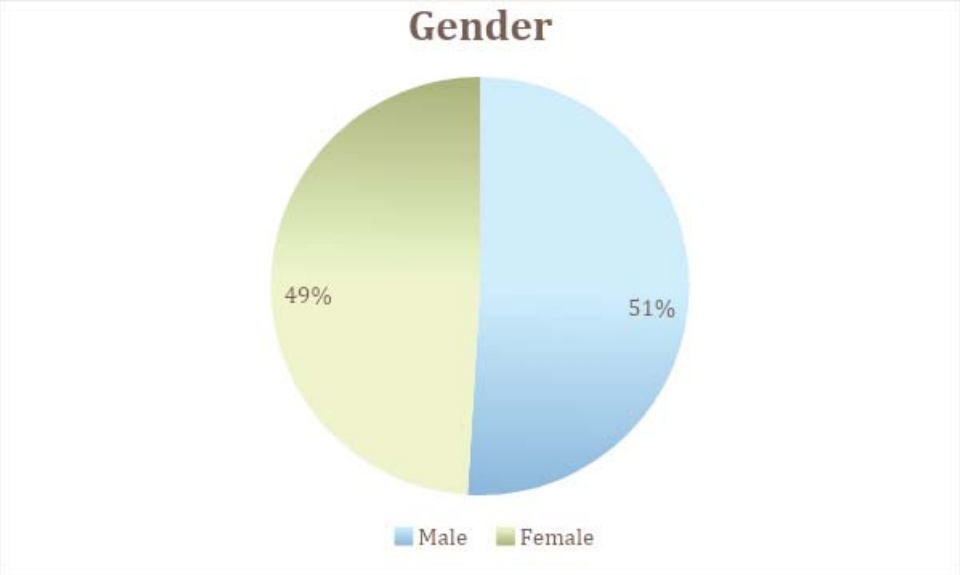


Fig. 2 Gender distribution among child respondents

Age distribution among all the children who participated in the study was also diverse with the mean age of child participants being 14.05 years, the median was 14 years. Children from the age of 9 to 17 years were the target respondents for the study. However, the bulk of the data which was collected has a slightly wider age group i.e., between 8-18 years. The age group that is represented most in the sample is of 12-17 years, comprising roughly 81.2 percent of the entire sample. The age group considered for analysis was 8-18 years, owing to the quantity and consistency of the data collected from these age groups.

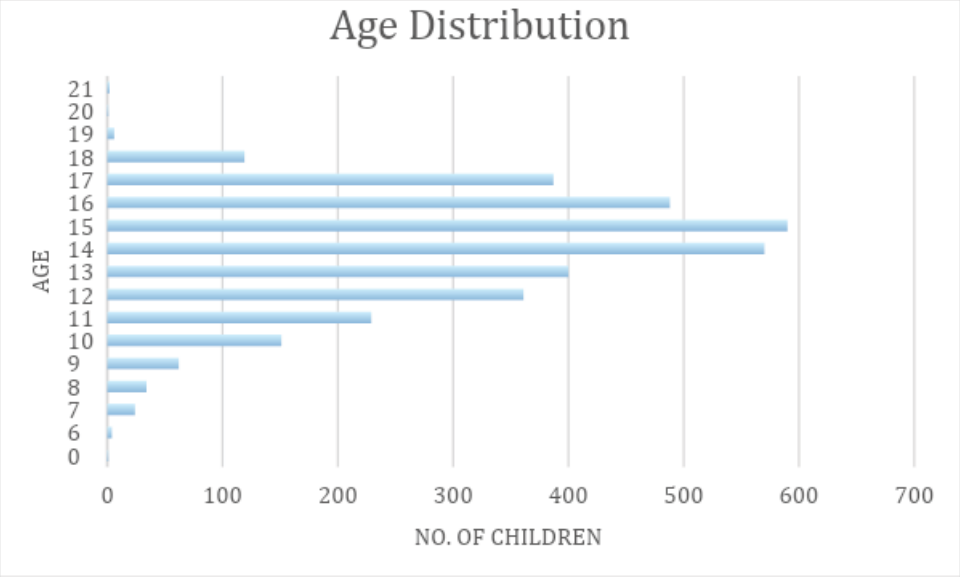


Fig. 3 Age distribution among child respondents

Smartphone and Internet Devices: Access, Ownership and Patterns of Use by Children and Adolescents

Considering the ways in which children get access to smartphones and internet devices, the data showed that the most prominent means to access smartphones and the internet for the children is through their **Parents' Phone** (**62.6 percent** of all valid respondents used their parents' phone). It is also interesting to note that **30.2 percent** of the children of all age groups (8 to 18 years) already possess their own smartphones and use the same for all purposes. The below-mentioned graph (fig. 4) provides more details about the devices used by children to access the internet.

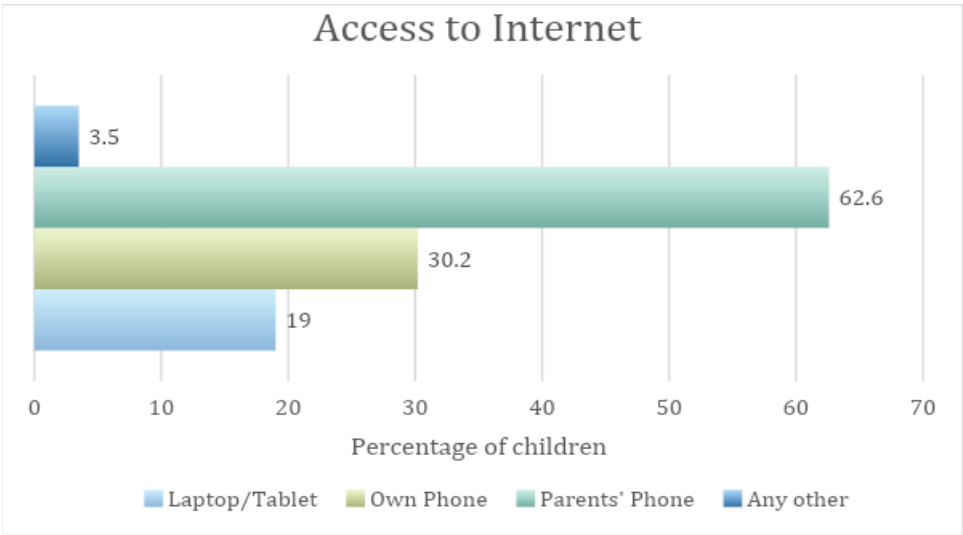


Fig. 4 Devices used by children to access the internet

An interesting inference emerged with regard to the internet devices, that the children are using it across the age distribution of children. As shown in the below mentioned line graph (fig. 5), the **trend line of percentage of children using their own smartphones shows a steep rise from the age of 13 years and onwards**. In comparison to this, the **trend line of children using laptops/tablets** to access the internet is evidently **stable across all ages**. This can lead us to the deduction that parents/guardians are more willing to provide smartphones to their children, from the ages of 12-13 years onwards as against a laptop or tablet, for all intents and purposes of education and recreation.

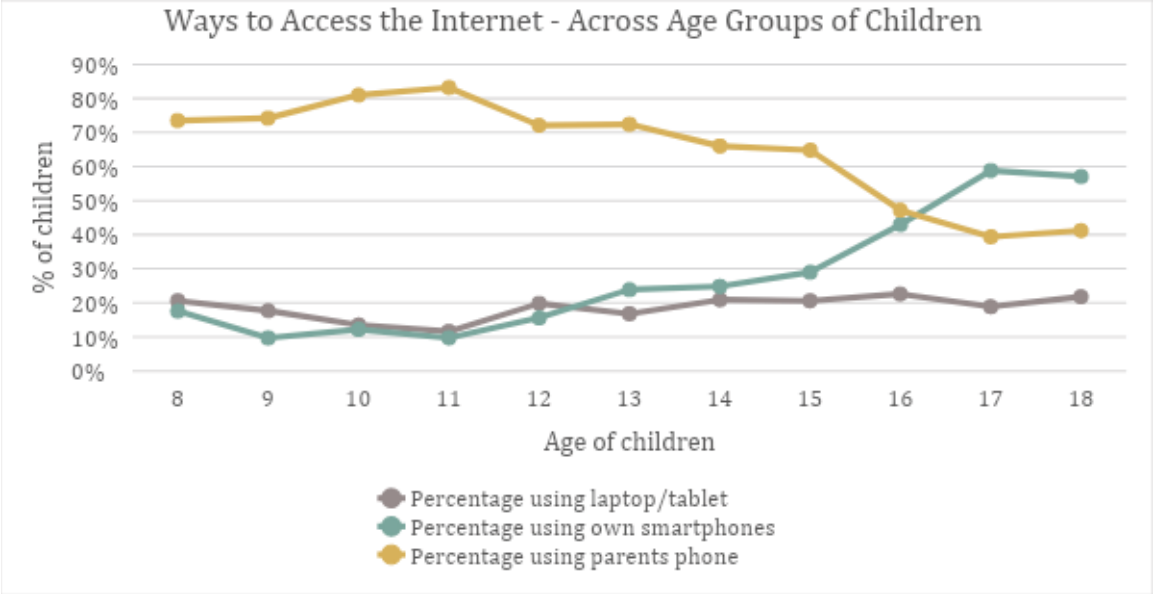


Fig. 5 Devices used by children to access the internet – age wise

The opinion expressed by the children about their access to the internet and ownership of devices also complements the information provided by their parents, who constitute another category of key stakeholders for this study. It Further provides strength to the deduction i.e., the tendency to provide children with their own smartphones, at quite young age, as against other devices like laptops/tablets/notebooks which could perform similar tasks and functions. More details about the devices which children are using, according to their parents, is provided in the graph (fig. 6) which follows:

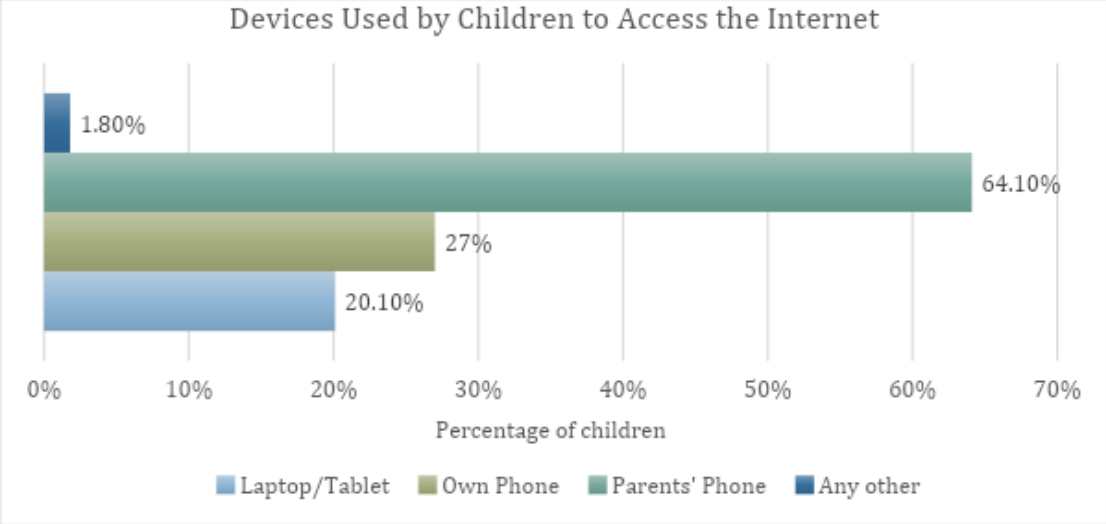


Fig. 6 Devices used by children to access the internet – according to their parents

The major activity for which children use smartphones/internet devices these days is **'Online learning and classes'**, 94.8 percent of all valid respondents were of this opinion. Other major purposes of use include; messaging applications, referring study materials, music and games, details about these are represented in fig. 7.

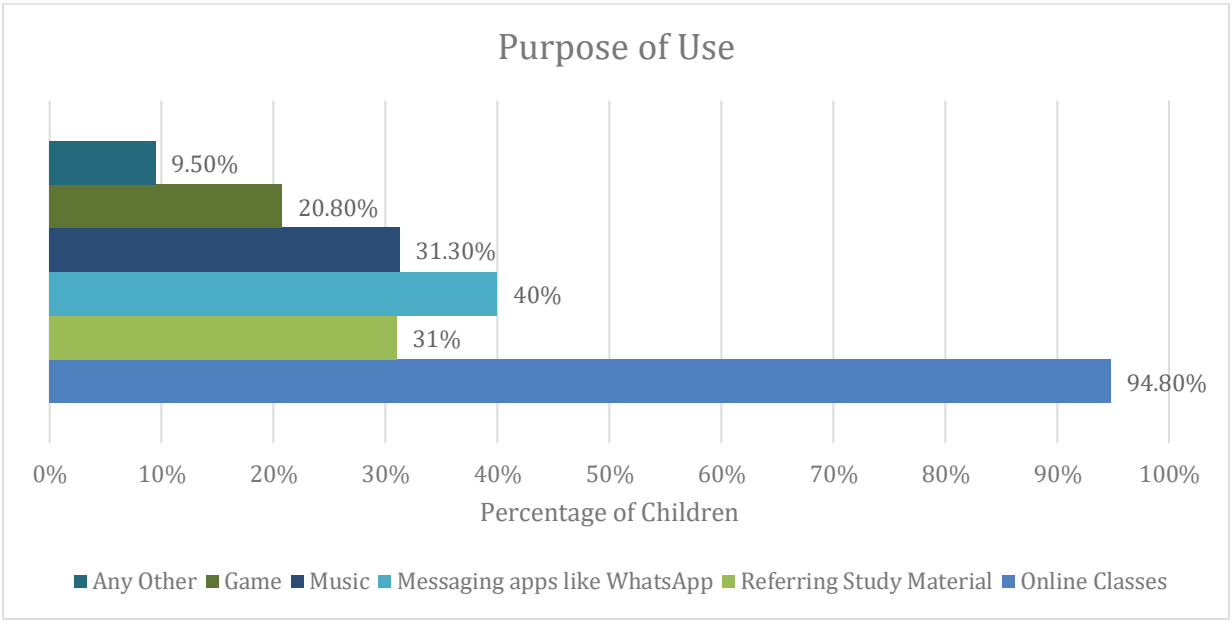


Fig. 7 Purpose of using smartphones & internet devices by children

Use of smartphones and internet devices for online education is fairly consistent among children across all age groups, as one would find in the graph mentioned below (fig. 8). Whereas, the trend lines of use for purposes like messaging applications, referring study material and music show a gradual progression as we move forward through the age groups.

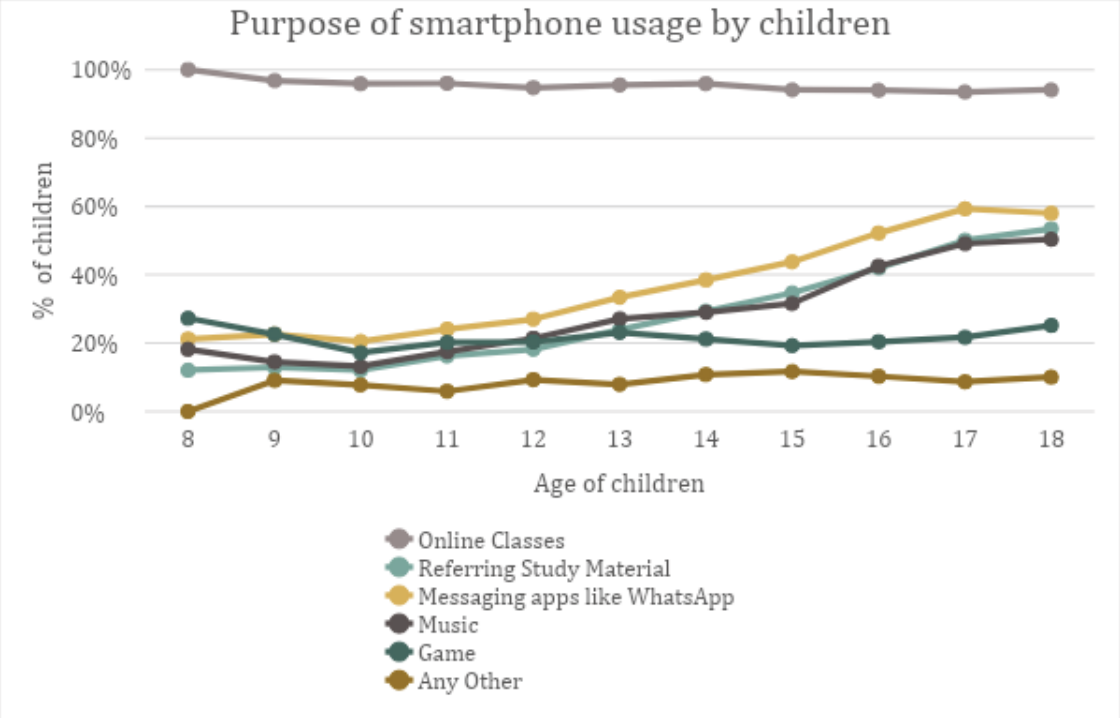


Fig. 8 Purpose of using smartphones – for children of all age groups

When asked about the features/facilities that children like to use or enjoy using on smartphones/internet devices, **52.9 percent** answered as '*Chatting (using instant messaging apps like WhatsApp/Facebook/Instagram/Snapchat)'*. While the most common purpose is using internet enabled devices for online learning/ classes, only **10.1 percent of children like to use smartphones for online learning and education.** The details about other features liked by students are mentioned below in fig. 9.

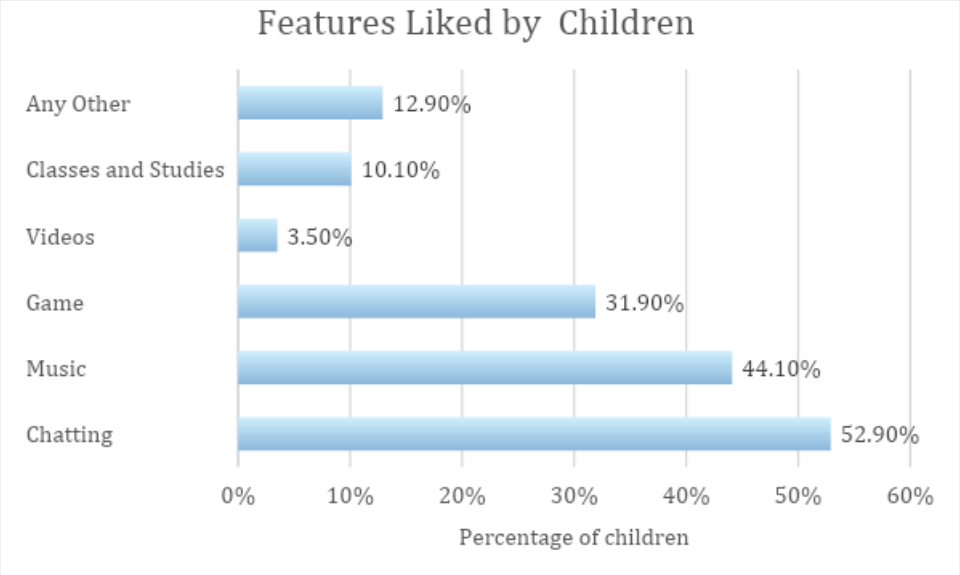


Fig. 9 Features children like using on smartphones

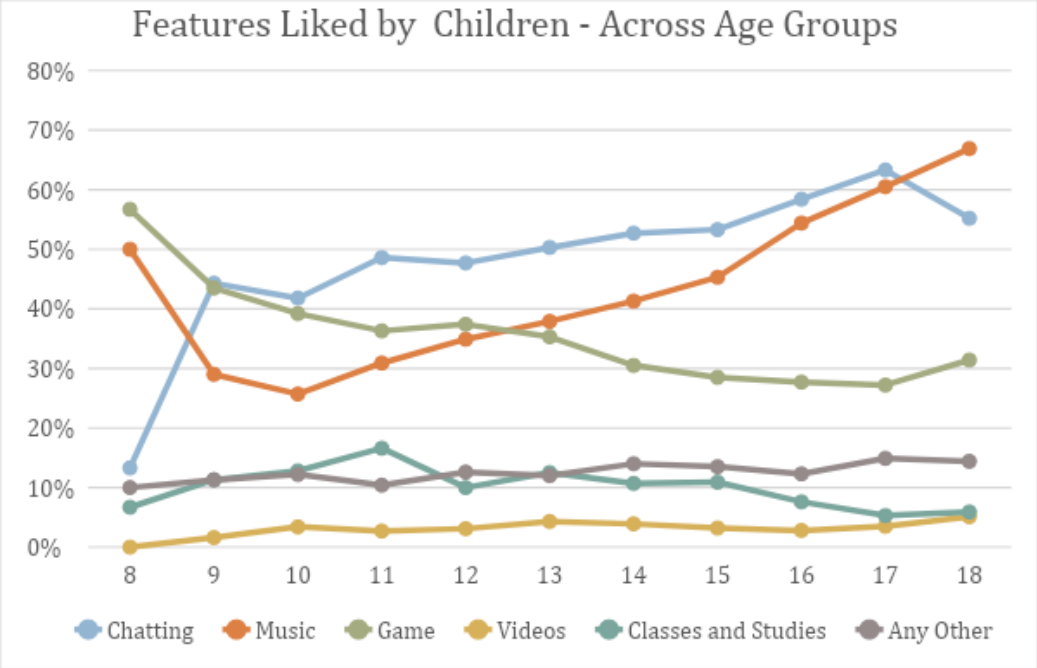


Fig. 10 Features children like using on smartphones – across age groups

As a part of the study, the children were asked if they bring (used to bring) or are allowed to bring **smartphones to their schools**, **91.2 percent** of all valid respondents said **they don't** or are not allowed. An age wise distribution of this result showed that post the age of 13 years, there is slight increase in the

number of children who bring/used to bring smartphones to school at each subsequent age. See the graph below (fig. 11) for more details.

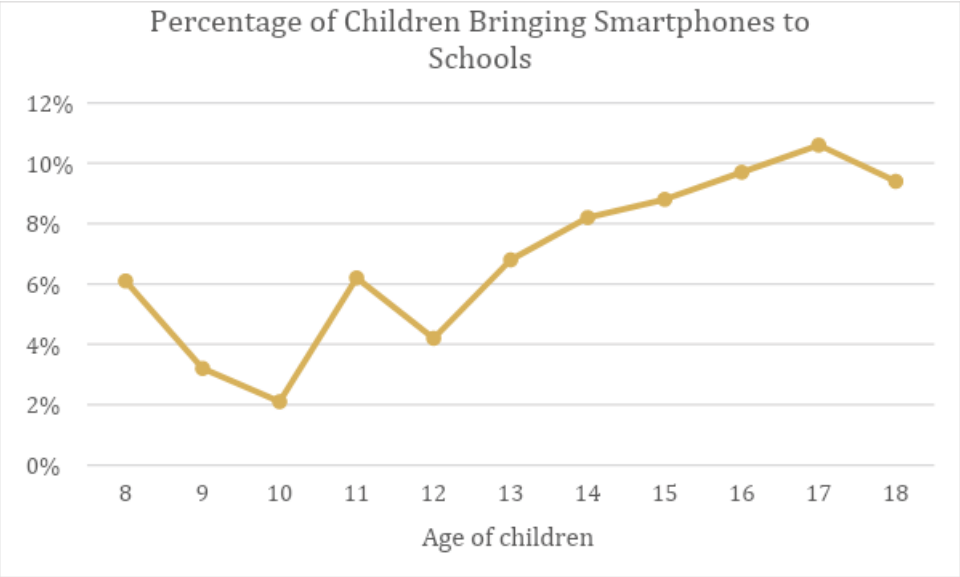


Fig. 11 Percentage of children bringing smartphones to schools– across age groups

Based on the above figure, it could be derived that child using smartphones in schools is not such a big concern (as at any age group, less than 11 percent of children bring such devices to school). What may be a concern, however, is the ease with which children are able to create **accounts on social networking websites.** The study's data show that **42.9 percent of all valid respondents** amongst children confessed to **having a social networking account,** as is shown in the pie-chart below (fig. 12)

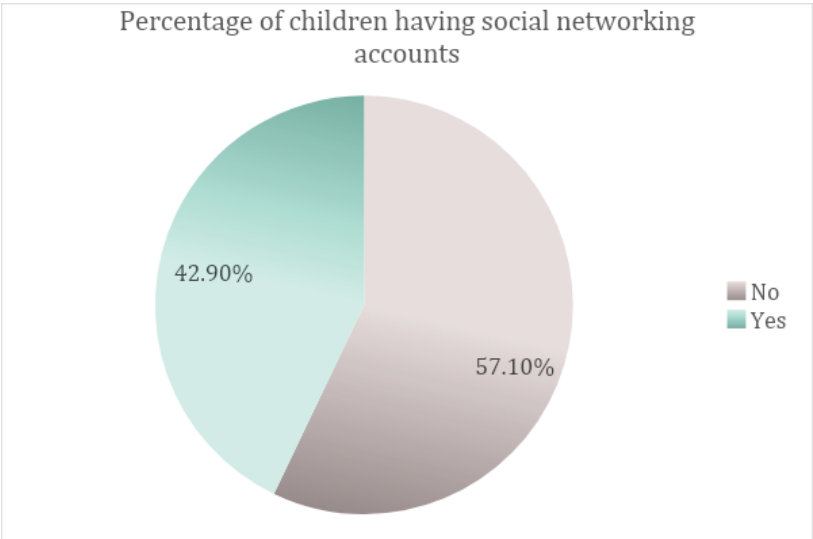


Fig. 12 Percentage of children and social networking accounts

Study of the age distribution of children who have a social networking account and plotting a trend line, shows that there is a *direct relationship between age and having a social media account,* as **with the increase in age** near proportional **increase in number of children having social networking accounts was witnessed** (fig. 13).

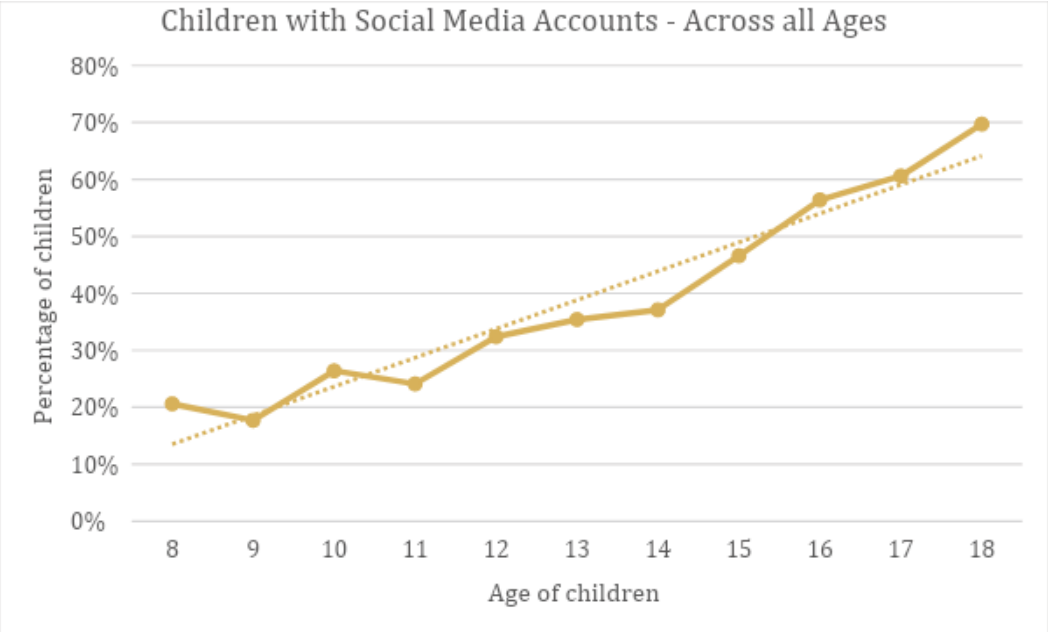


Fig. 13 Percentage of children and social networking accounts – across age groups

Among those children who have accounts on the major social networking apps/sites which they use, **Facebook** (**used by 36.8 percent**) – **Instagram** (**used by 45.50 percent**) are the most popular. Details about others is presented in the graph below (fig. 14)

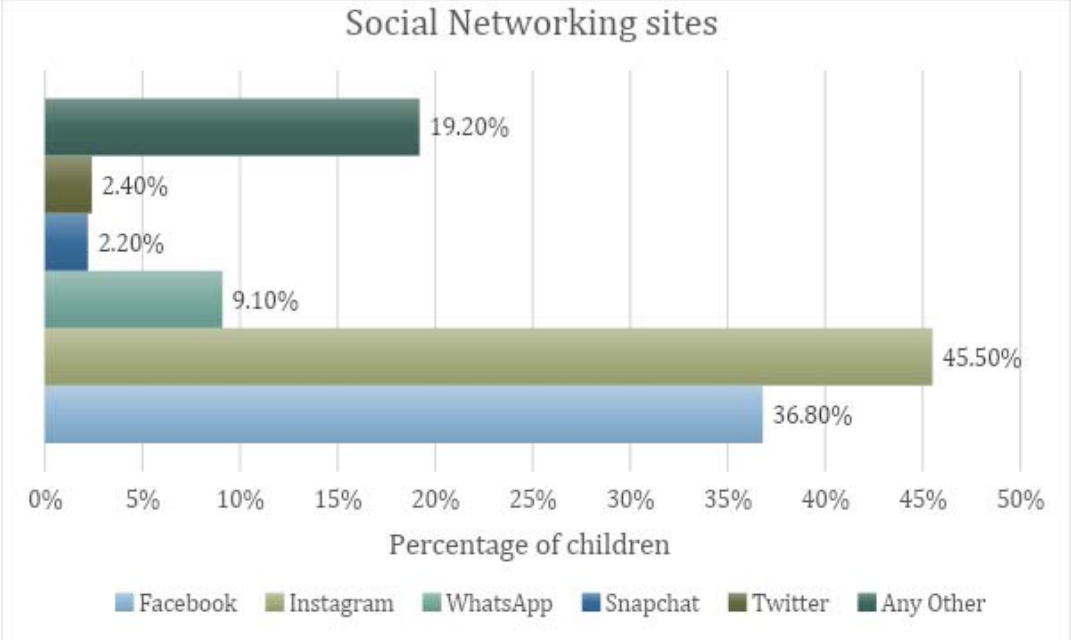


Fig. 14 Percentage of children having different social networking accounts

In the age wise distribution of children having social media accounts, it was found that children of all ages operate social media accounts. As can be observed in the line graph below (fig. 15), a large proportion of 10 years olds have such accounts (**37.8 percent and 24.3 percent of 10-year-old children have Facebook and Instagram accounts**, respectively). This is seemingly in contravention to the guidelines laid down by various social networking platforms. As for Facebook and Instagram, the age barrier for creating an account happens to be 13 years. Social media platforms contain and disperse such a variety of content, a lot of which is neither appropriate nor conducive for children. They can be anything from violent or vulgar content to instances of online abuse and bullying of children. **Hence, in this regard, proper oversight and stricter enforcement is required.**

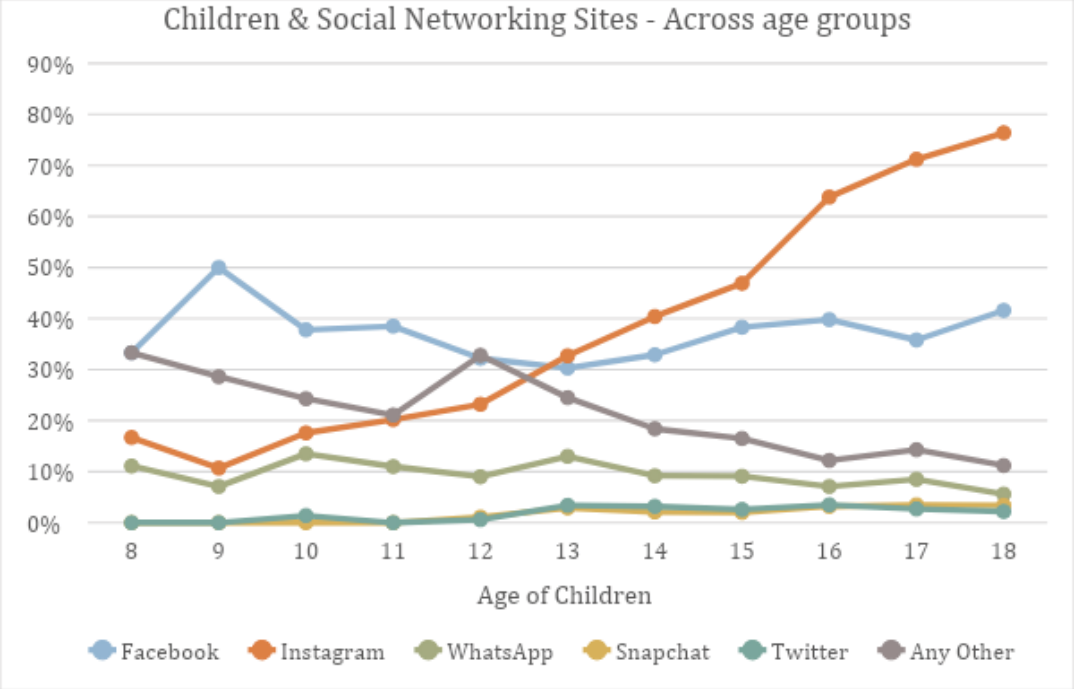


Fig. 15 Percentage of children having different social networking accounts – across age groups

As per the data collected, **78.90 percent of children** said that they **spend between 0-2 hours on** smartphones for using the internet, playing games, listening to music, and chatting etc., which is quite less compared to popular perception.

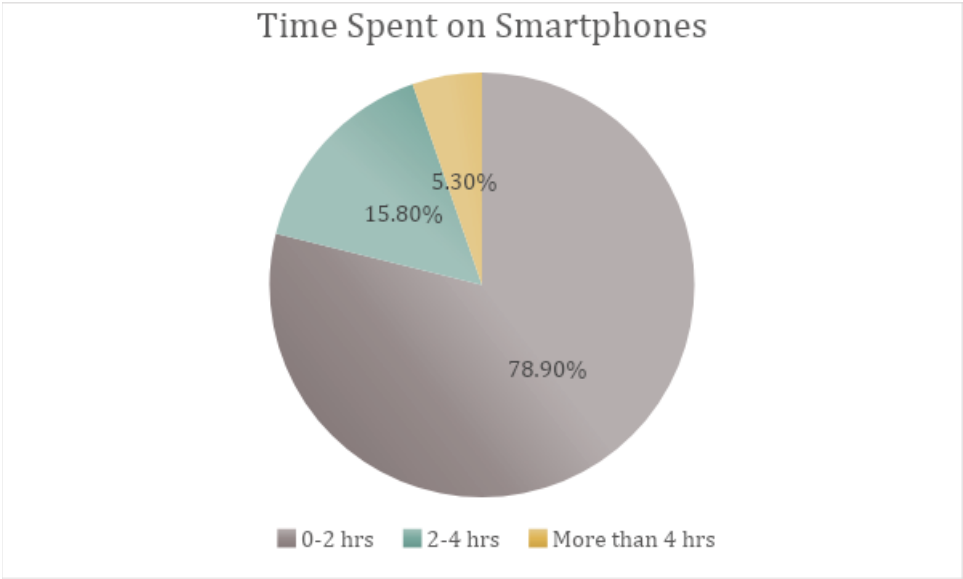


Fig. 16 Duration of time spent by children on smartphones for recreation

Smartphone Use among Children and Adolescents: The Impact on their Behaviour, Attitude, and State of Mind

This section will highlight the impact that smartphones and internet devices can have on the physical and psycho-social wellbeing of children.

The first point of discussion is the **use of mobile phones before going to sleep,** by children. As per the available literature, the use of smartphones/smart devices, which have vibrant screens and motion pictures at a minimum of 36 frames per second, before going to sleep has many negative and detrimental effects on the state of mind and health of humans, especially children. It can lead to adverse impact on children like sleep disorders, sleeplessness, anxiety, and tiredness etc. The collected data reveals that **23.80 percent of children use smartphones** while they are in bed, **before going to sleep**, which is quite a substantial proportion and a cause for concern.

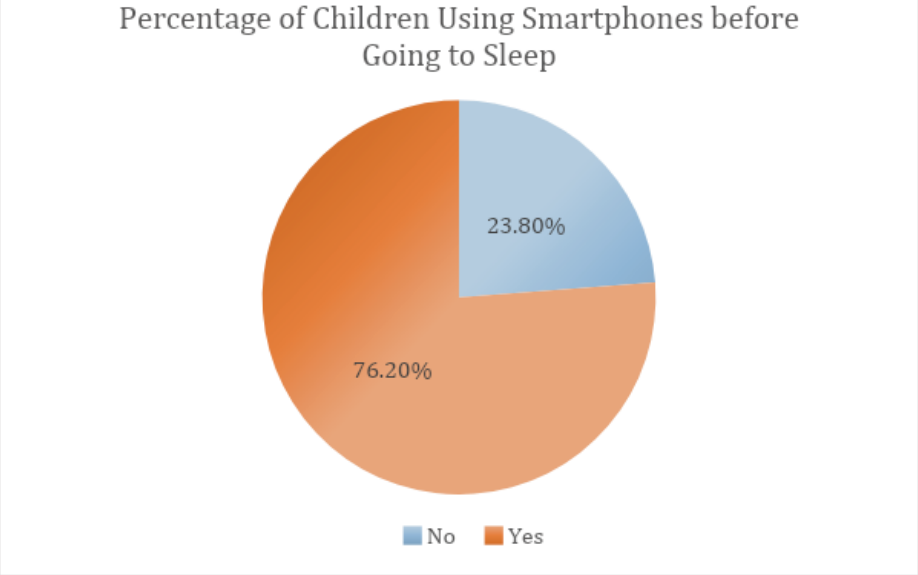


Fig. 17 Children who use smartphones before going to sleep

The data also indicates that use of a smartphone in bed increases with the increase in age of children. The same can be observed in the below mentioned graph (fig. 18).

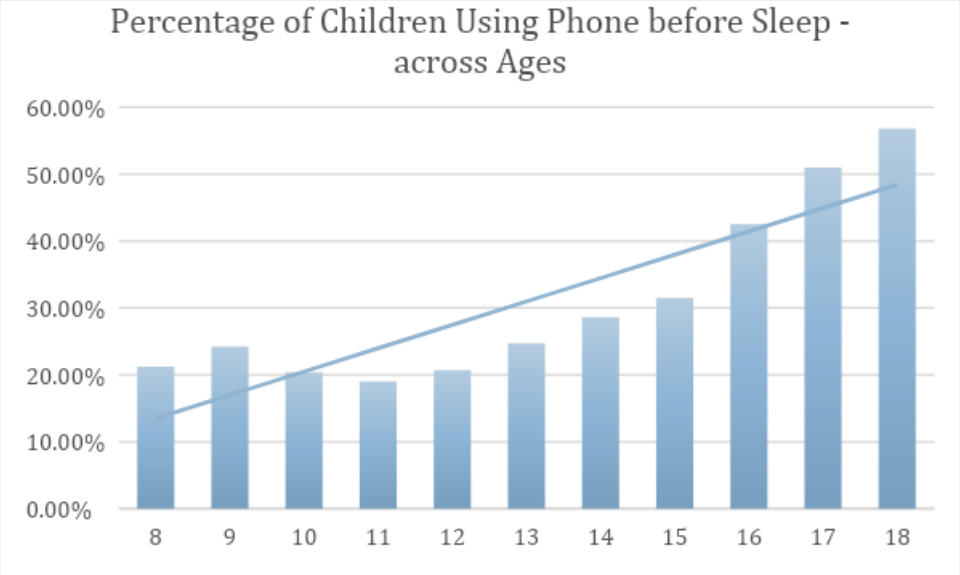


Fig. 18 Children who use smartphones before going to sleep – age wise distribution

Use of smartphones before sleeping is not the only ill-effect of such devices having adverse impact on children. Checking mobile phones while studying is another menace which is a prominent source of lapses in concentration and weakening of attention span, among children. This pie-chart below (fig. 19) shows that **only 32.7 percent of children never check their smartphones while studying**.

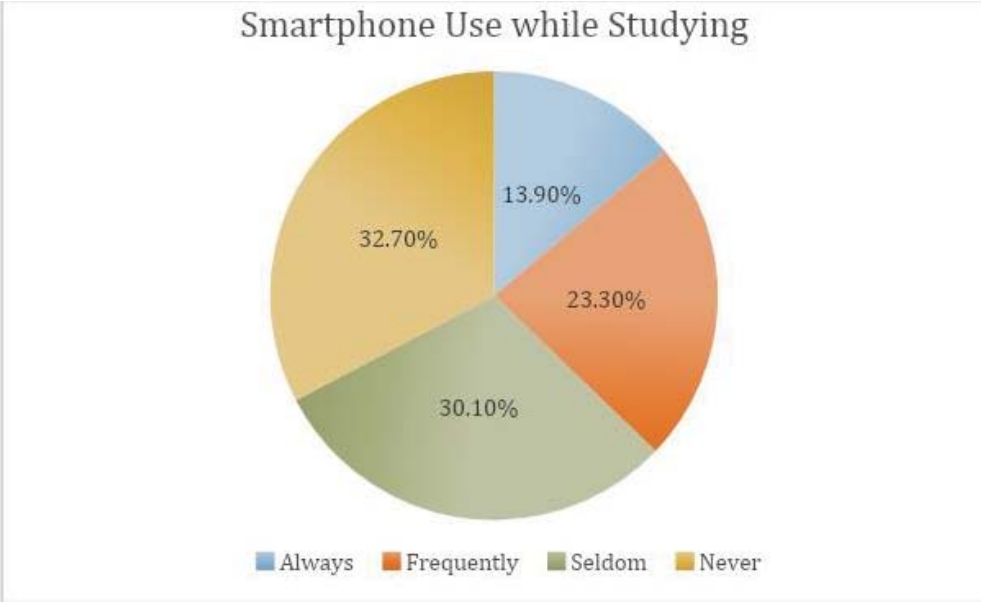


Fig. 19 Children who use smartphones while studying – age wise distribution

As discussed above, use or rather misuse of smartphones at inappropriate times can have detrimental impact on health and wellbeing of children. One such impact is reduction in levels of concentration among children. The graph below depicts that **approximately 37.15 percent of children, always or frequently, experience reduced levels of concentration due to smartphone use.**

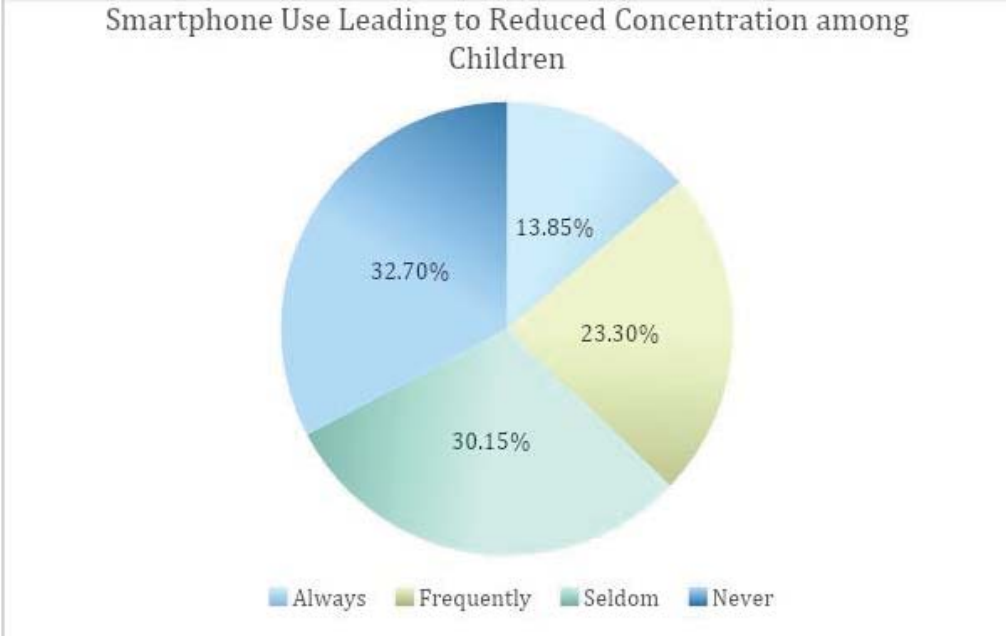


Fig. 20 Smartphones and reduction in concentration among children

In contrast to the points mentioned above about the adverse impacts of smartphones/internet devices on children, it must be acknowledged that they are the only alternative to ensure delivery of education, in times of a global pandemic. The pandemic has curtailed most of the physical activities and sports for children around the country. Video conferencing and instant messaging platforms are gradually becoming meeting places for children today. However, a large part of them (**32.70 percent**) **still prefer going out to see friends rather than engaging with them over phone.** (fig. 21)

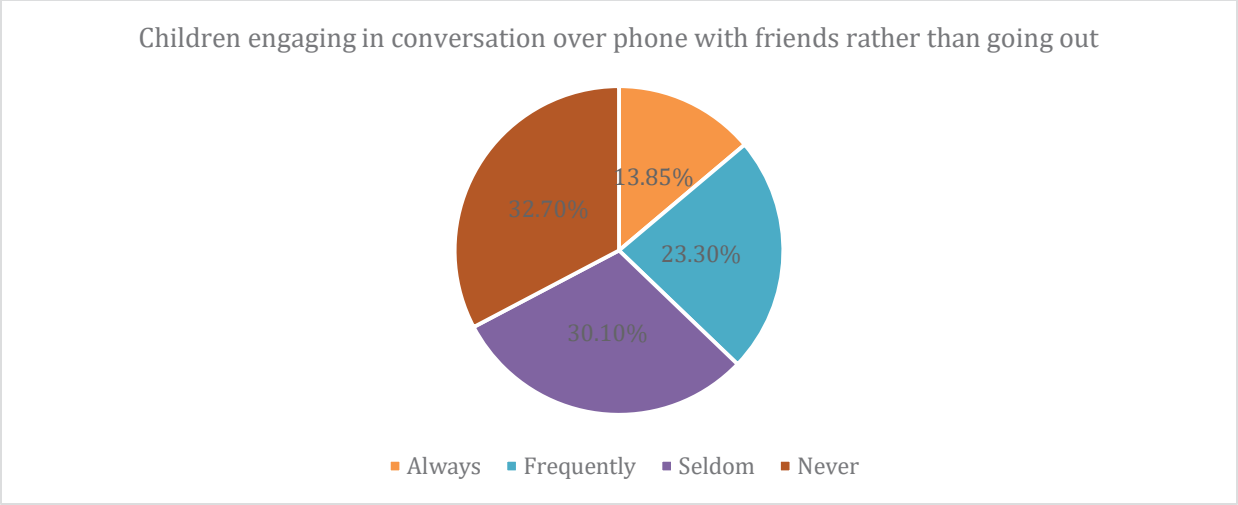


Fig. 21 Smartphones and friends or going out with friends

A large majority of **children believe that using the internet has 'Very Much or 'Partially' increased their creativity**, which is 31.5 percent and 40.5 percent respectively

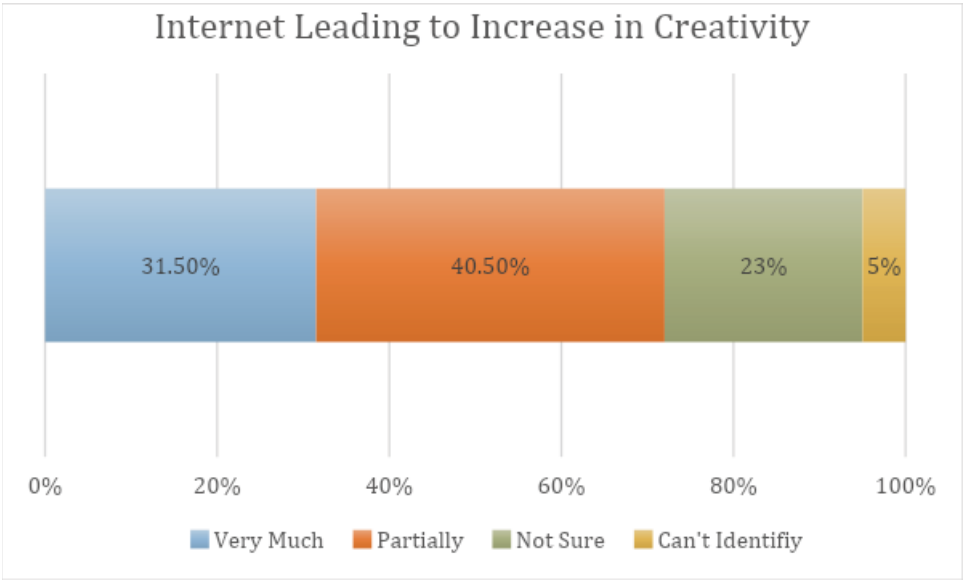


Fig. 22 Smartphones and creativity

More than 1/3 of the children and adolescents who participated in the study viewsmartphonesas the **ultimate entertainment device.**

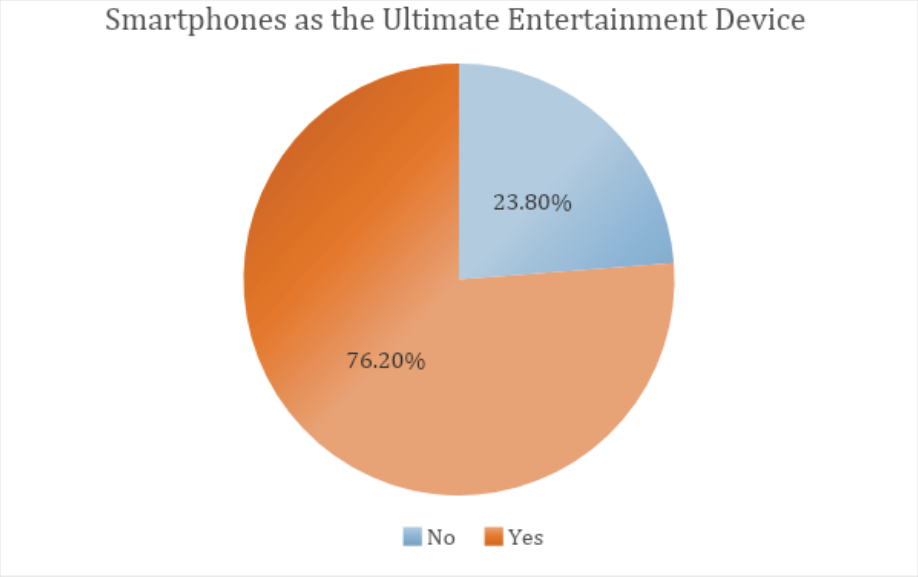


Fig. 23 Smartphones as the ultimate entrainment device

More than 9 in 10 children participating in the study think that the **world** that they live in today is '**addicted to cell phones.'**

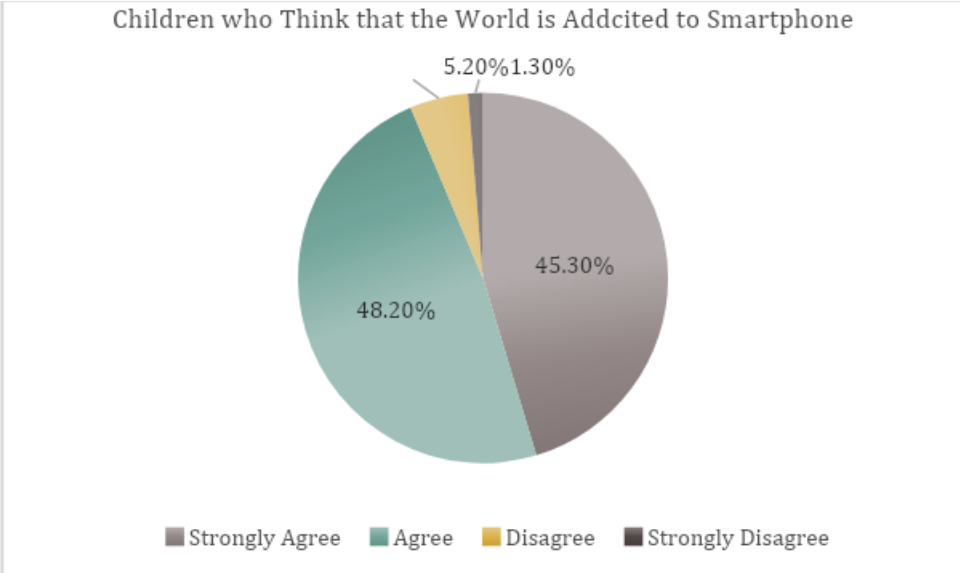


Fig. 24 The global addiction of smartphones

Smartphones, Internet Devices and Education

The Covid-19 pandemic has altered the traditional set-up and framework of school learning, with the advent of online learning and classes via video conferencing platforms. To understand what children, feel about the impact of the pandemic and online classes on their education, we asked them the same in the study. While **29.7percent of the children feel that the pandemic has 'Very much' had a negative impact, 43.7percent think it has had 'Partial' negative impact on their education**, as shown in the graph mentioned hereafter (fig. 25). Hence, it could be concluded that the education of the majority of school children was negatively impacted due to the pandemic and its subsequent consequences.

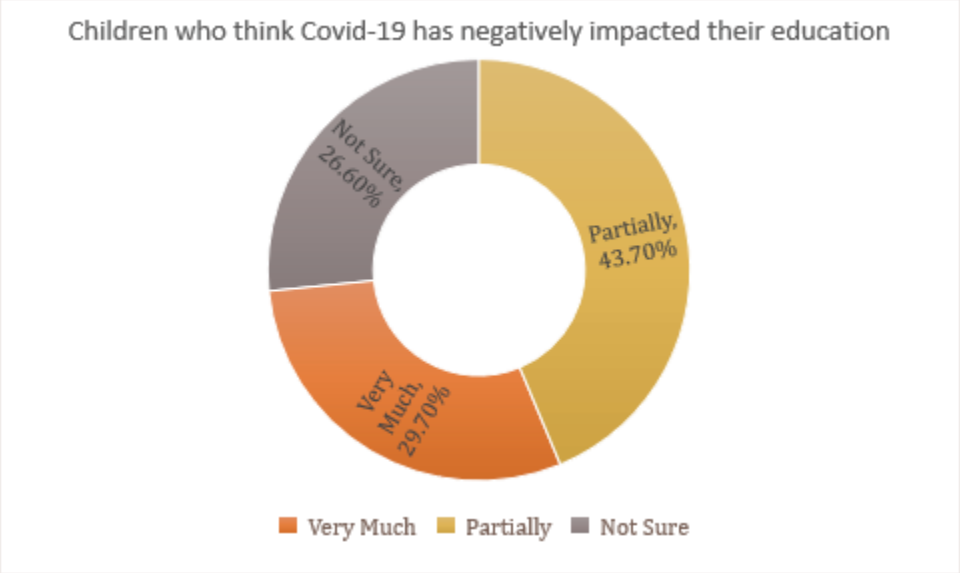


Fig. 25 Covid-19 and online learning, impact on education of children

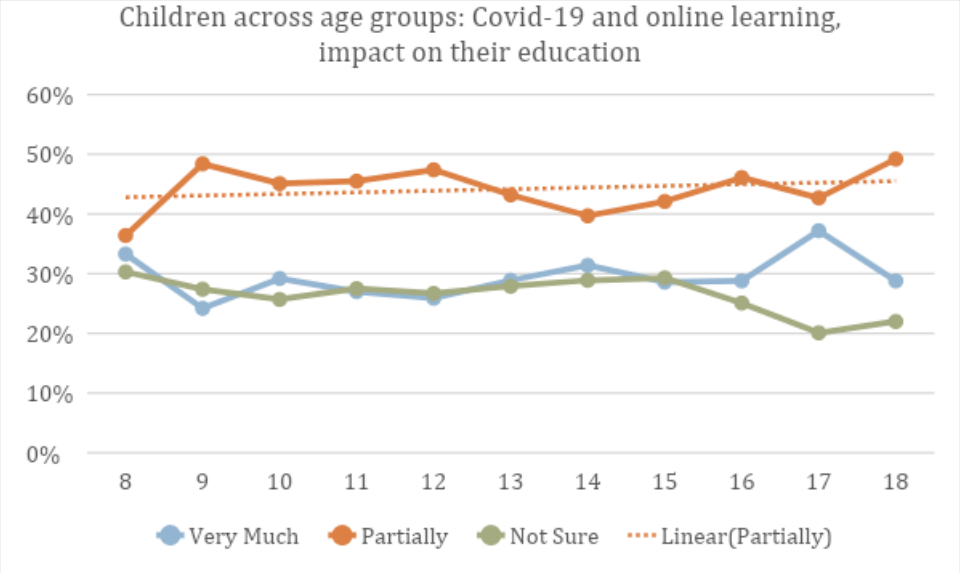


Fig. 26 Covid-19 and online learning, impact on education of children – age wise distribution

In the above graph (fig. 26) it is clear that students across all age groups think that their education has suffered due to the pandemic, and somehow online learning has not been good enough. In the trend lines it is found that Covid has 'Very much' and 'Partially' impacted education categories, across all ages.

In the current context, that of a global pandemic, the use of the internet for education has witnessed widespread acceptance. The data says that **around 35.30 percent of children today are making 'Very High' or 'High' use of the internet for education,** and around 34.1 percent of children are making 'Moderate' use (fig. 27).

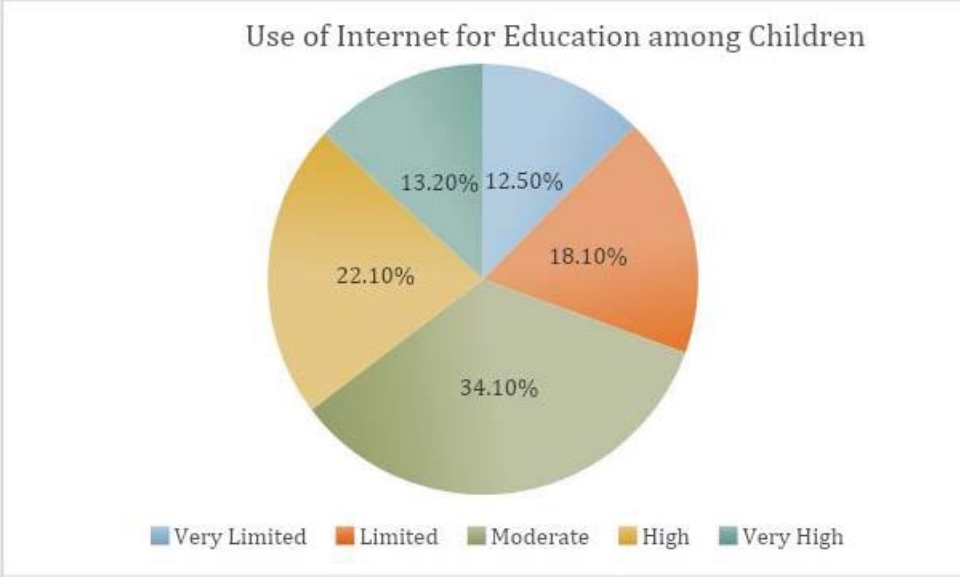


Fig. 27 Internet, online learning and education of children

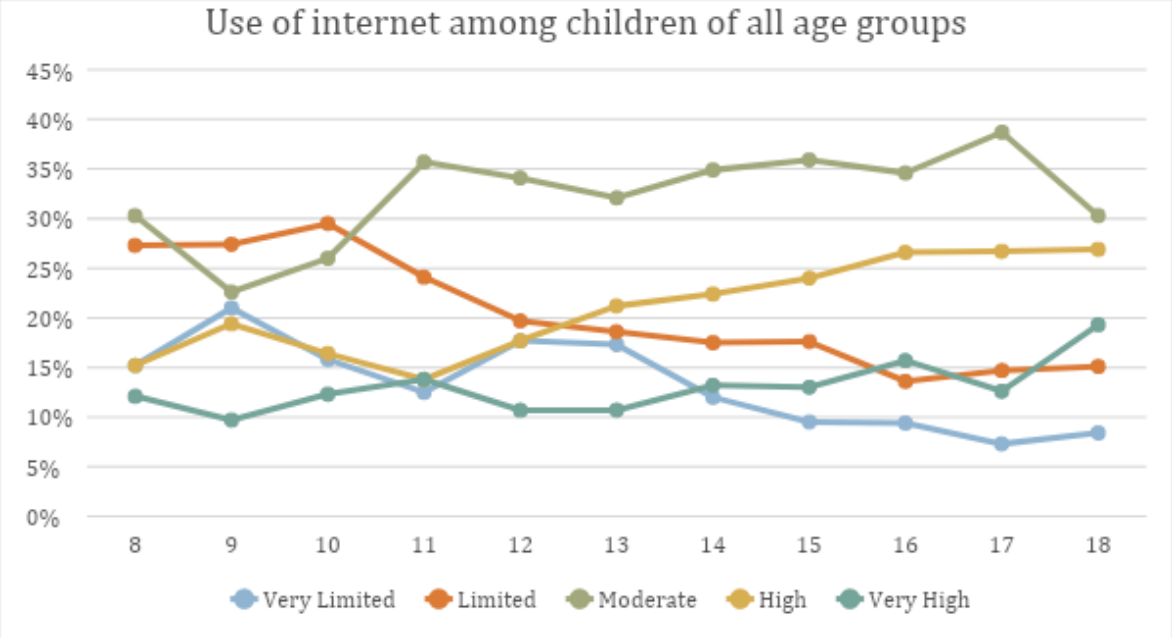


Fig. 28 Internet, online learning and education of children – age wise distribution

According to children, the internet can be used in much better ways to improve their education; among them 'Messaging group-based student teacher interaction' and 'Applications to learn online' were the most popular with 64percent and 62.20percent of students suggesting when used as mentioned.

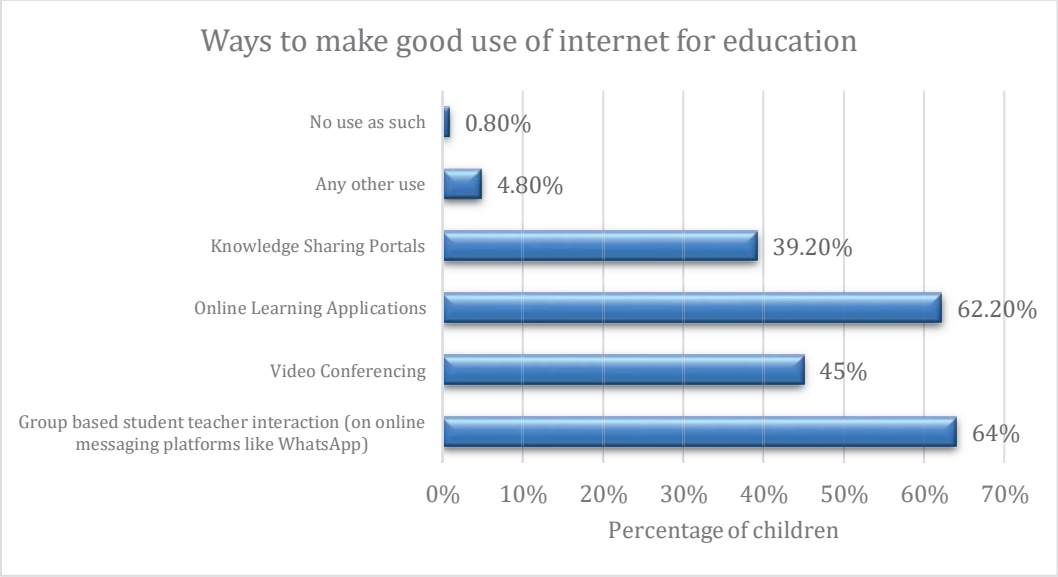


Fig. 29 Internet, online learning and ways to improve education of children

The parents who participated in the study were mostly satisfied with the way their child's school uses/used smartphones. The graph below (fig. 30) provides representative details about all choices.

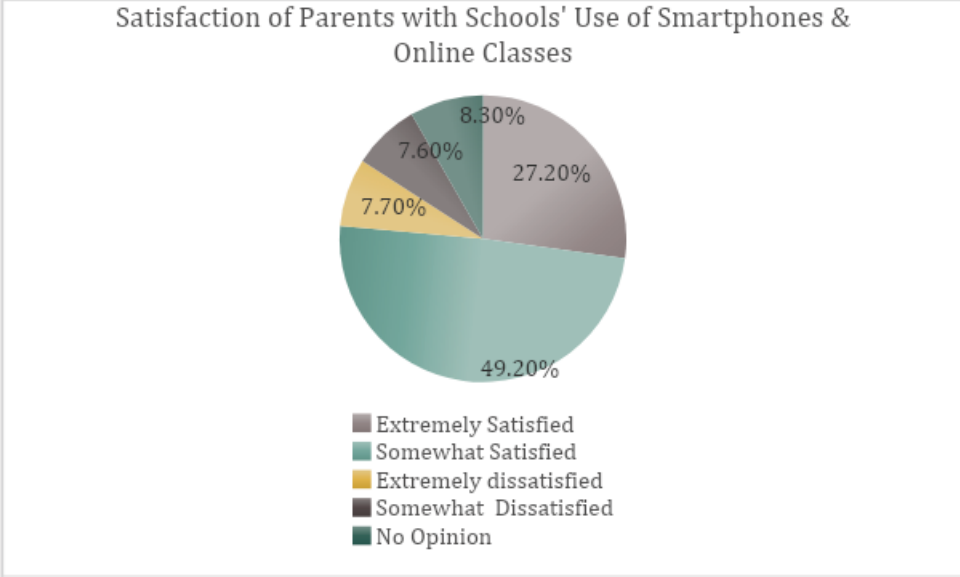


Fig. 30 Parents' satisfaction with schools' use of smartphones and online teaching-learning

Parents also provided suggestions on ways **in which schools could improve their approach to using smartphones in education**. The most common among these were to - 'Incorporate duration of usage of internet in lesson plans of children' at 29.1percent and 'Create interactive quizzes or polls for children to engage them more' at 23 percent.

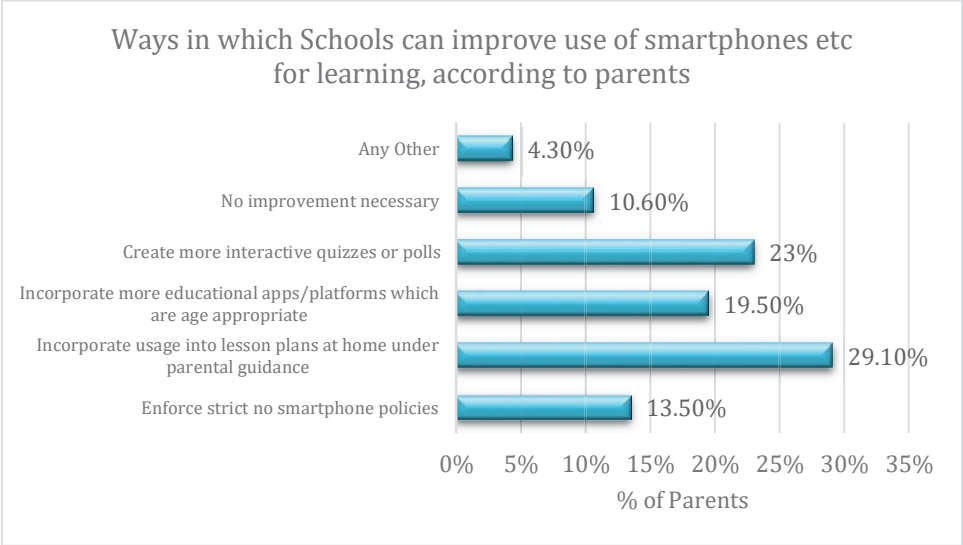


Fig. 31 Parents' suggestion about ways to improve use of smartphones in online learning

Most of the teachers (54.1percent of them) who participated in the study believed use of **smartphones in the classroom is 'Immensely or Somewhat Distracting'**.

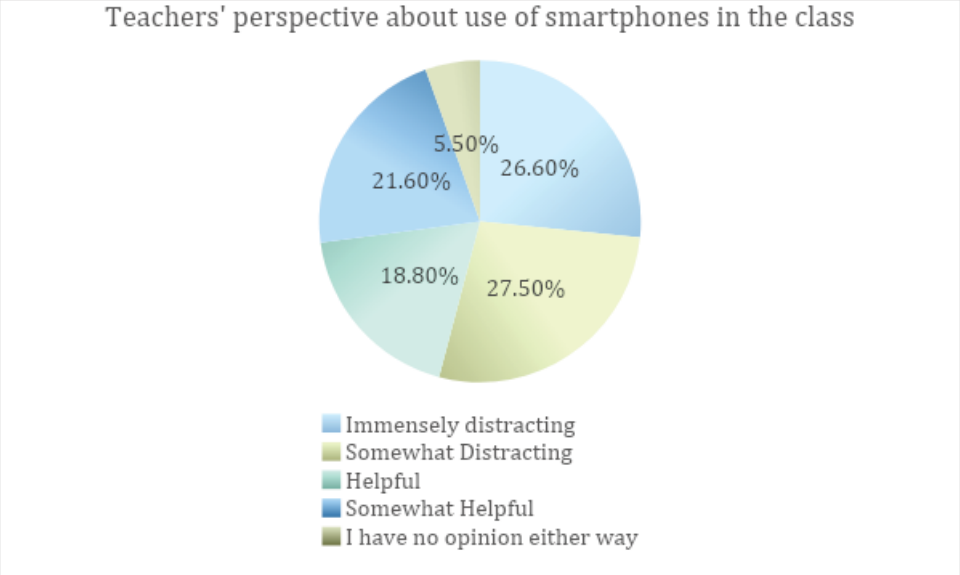


Fig. 32 Teachers' perspective about use of smartphones in classes

It must be recognised that most of the teachers do not have prior experience, training, or wherewithal to execute their duties of teaching in the new digital ecosystem. It was clearly reflected in the graph below (fig. 33) that shows that around **72.70 percent of teachers had no prior experience of using smartphones/internet devices.** Therefore, there is a need to equip teachers with digital knowhow and give them access to sufficient educational resources and teaching aids etc.

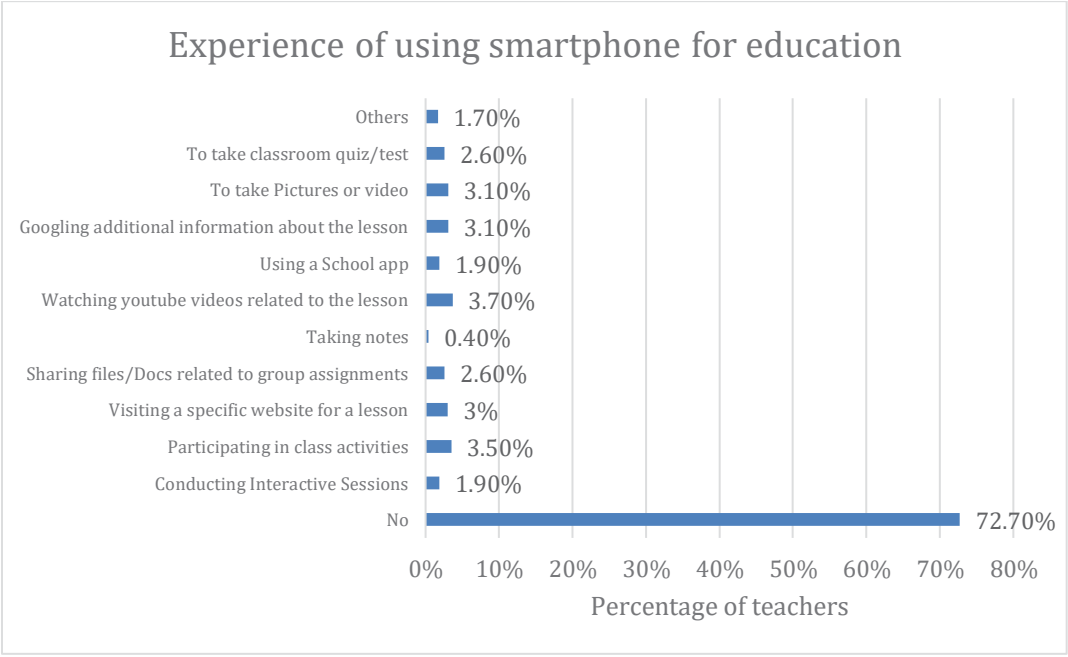


Fig. 33 Teachers' experience using smartphones for classes

There are many additional supports that teachers have suggested which could help effectively incorporate smartphone usage into the curriculum. The most prominent of these are three, i.e., '**Access to educational resources', 'Interactive tests & Quizzes' and 'Software to monitor misuse by children' at 54.2 percent, 52.6 percent and 51.70 percent** respectively.

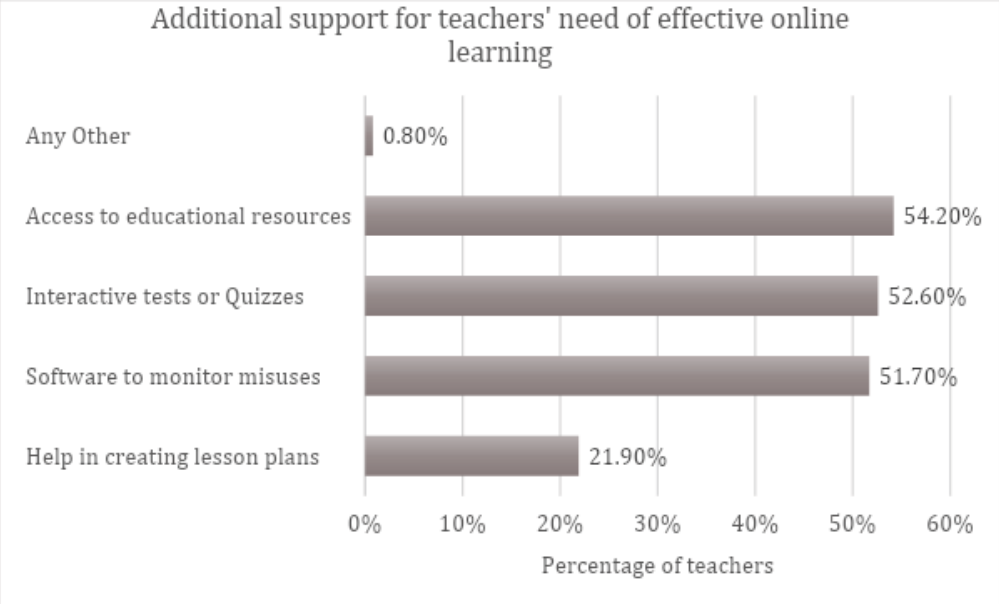


Fig. 34 Teachers' need for additional support

The **biggest challenge that teachers face** in allowing use of smartphones is that they find it '**Hard to Monitor' what students are doing**; (**36.1 percent** were of this opinion).

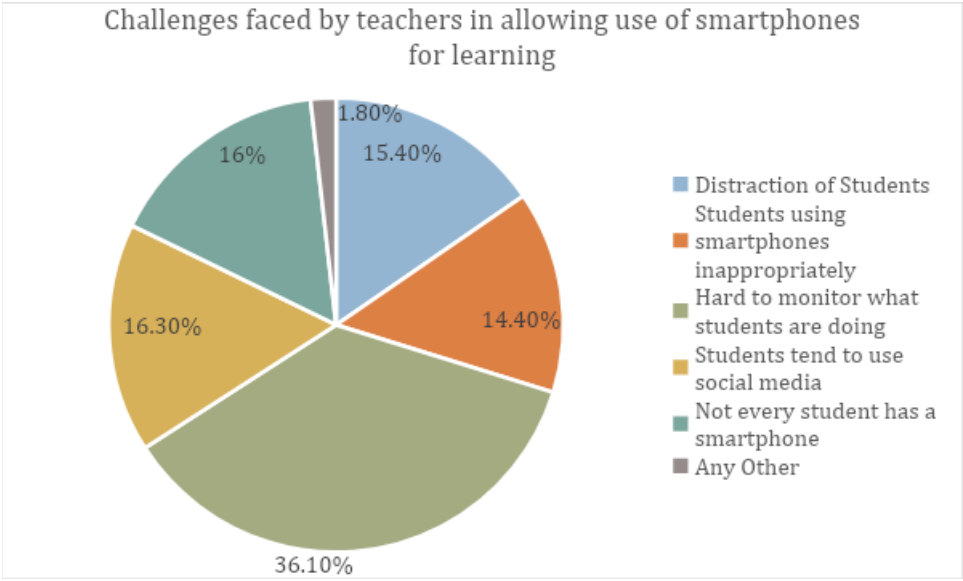


Fig. 35 Teachers' biggest challenges in using smartphones for education

In regular education, smartphones should be used to *provide additional instructions and practising opportunities for students with such needs* and *develop skills of independent learning* according to the teachers.

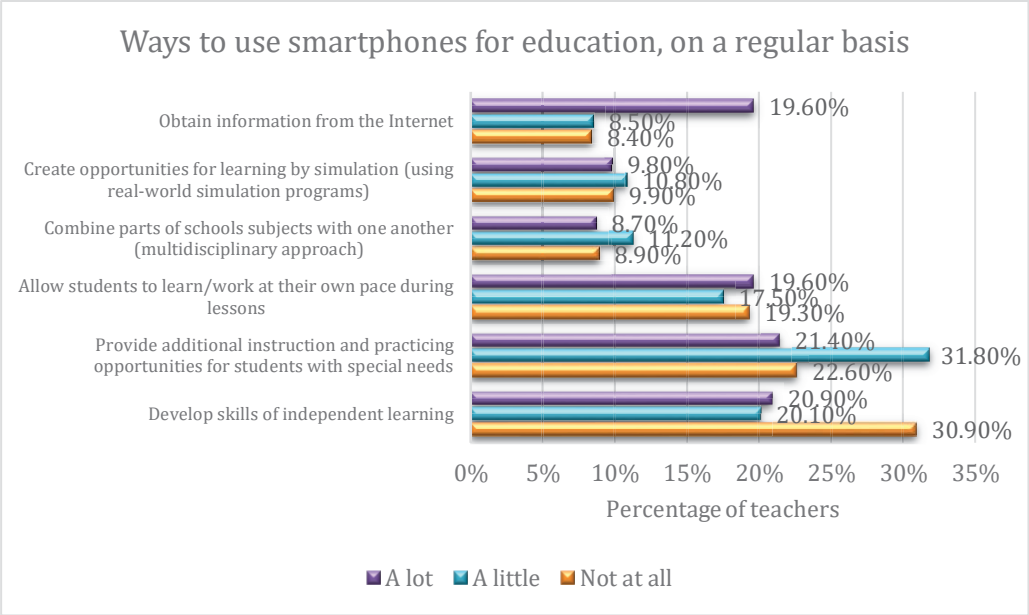


Fig. 36 Teachers ways to use smartphones for education on a regular basis

Parental Guidance and Support for Children using Smartphones and Devices

76.2 percent of parents who responded, shared that they **have fixed a time limit for usage of the Internet devices and mobile phones for their children**. The same is represented in fig. 37

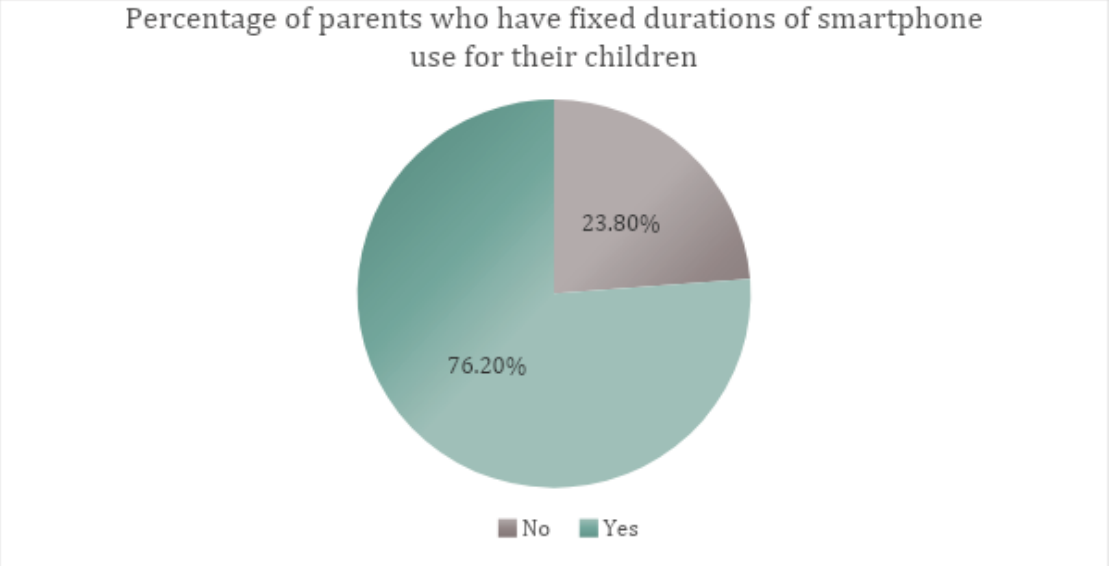


Fig. 37 Parents who have fixed time limits on use of smartphone and internet

According to parents who participated in the study, the best way of using smartphones by children is **'to help with homework'** with **37.2 percent** approving this use. (fig. 38)

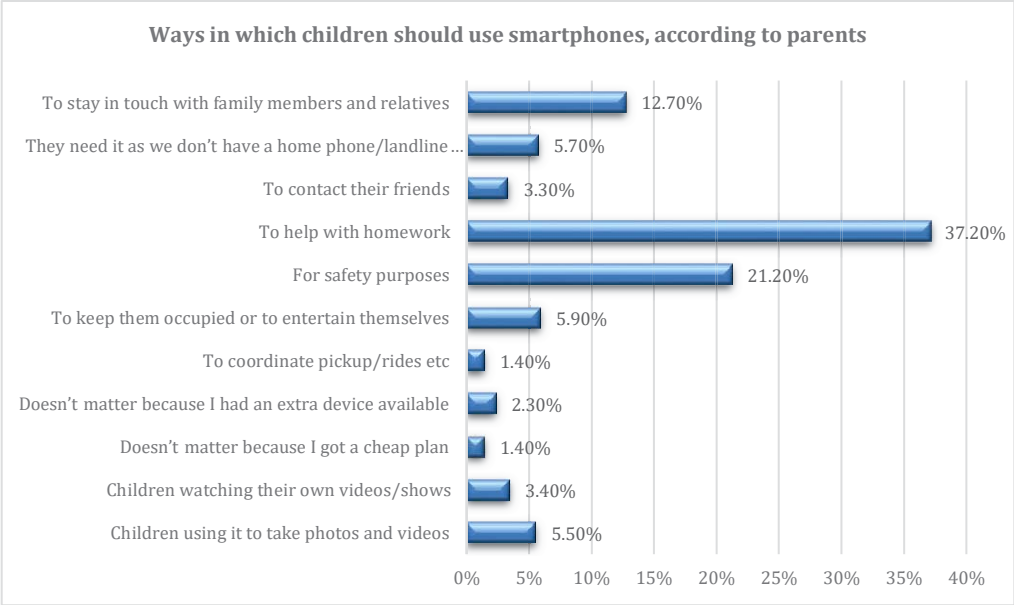


Fig. 38 Parents' enlisted ways to use of smartphone for children

Social Networking Sites – Region wise Trends

Let us also have a look at the trend line of usage of different social networking sites across regions.

North - DELHI NCR

In the north region, that has been demarcated as the region Delhi NCR and all adjoining urban and rural areas, for the purpose of this study, around **41.40percent of children have their own social media account** and **Instagram** is the **most popular** platform.

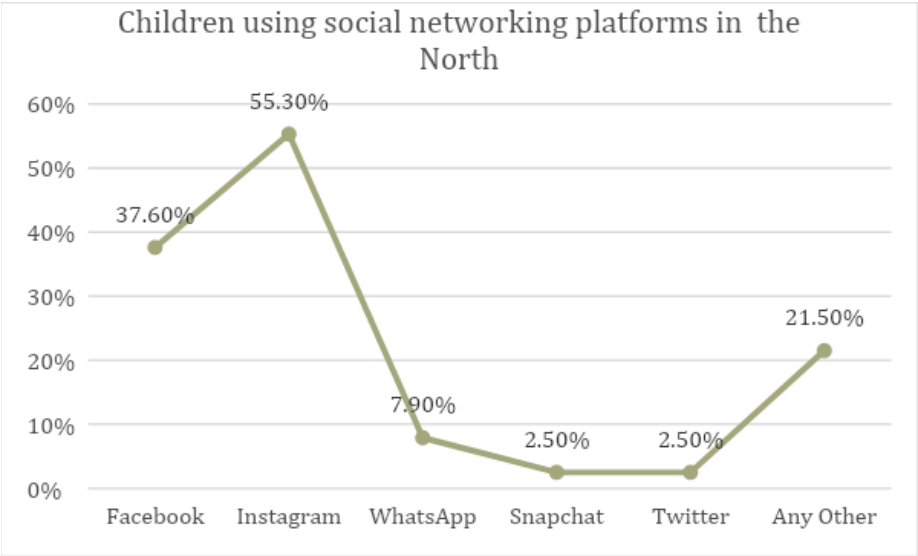


Fig. 39 North's Social Networking trend line

South– TELANGANA

The Southern region has been demarcated as the city of Hyderabad and the adjoining urban and rural areas, for the purpose of this study. In the Hyderabad region, around **41.30 percent of children have their own social media account** and **Instagram** again is the **most popular** platform.

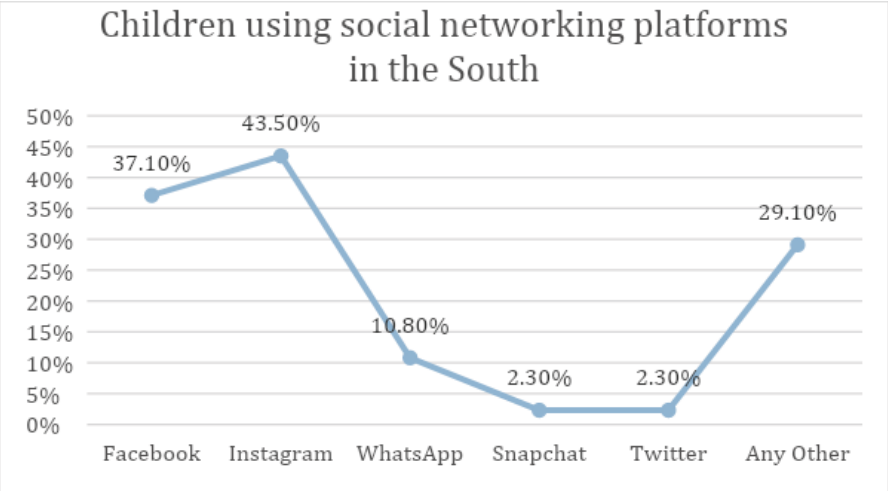
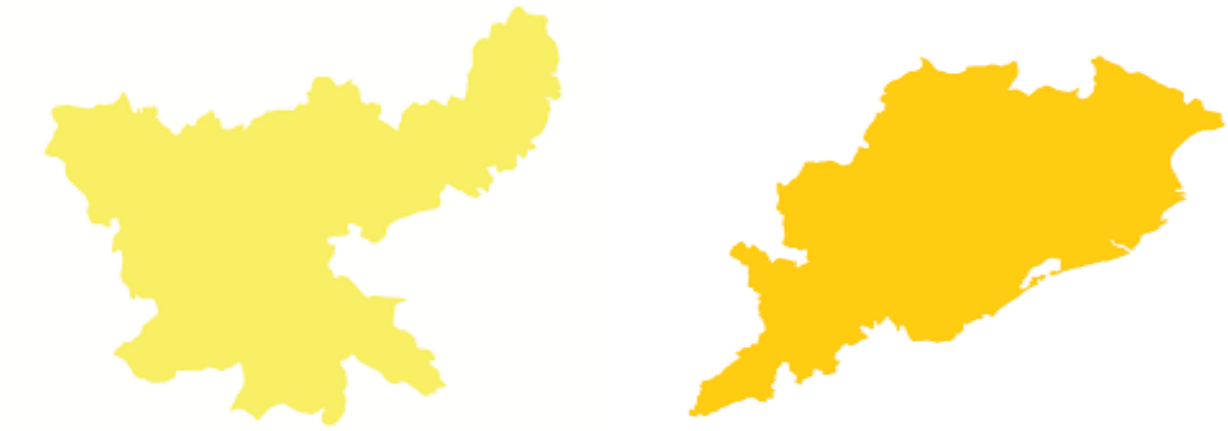


Fig. 40 South's Social Networking trend line

East: JHARKHAND & ODISHA

The East region has been demarcated by the cities of Bhubaneswar and Ranchi and the adjoining urban and rural areas, for the purpose of this study. In this region, around **47.60 percent of children have their own social media account** and **Facebook** is the **most popular** platform.



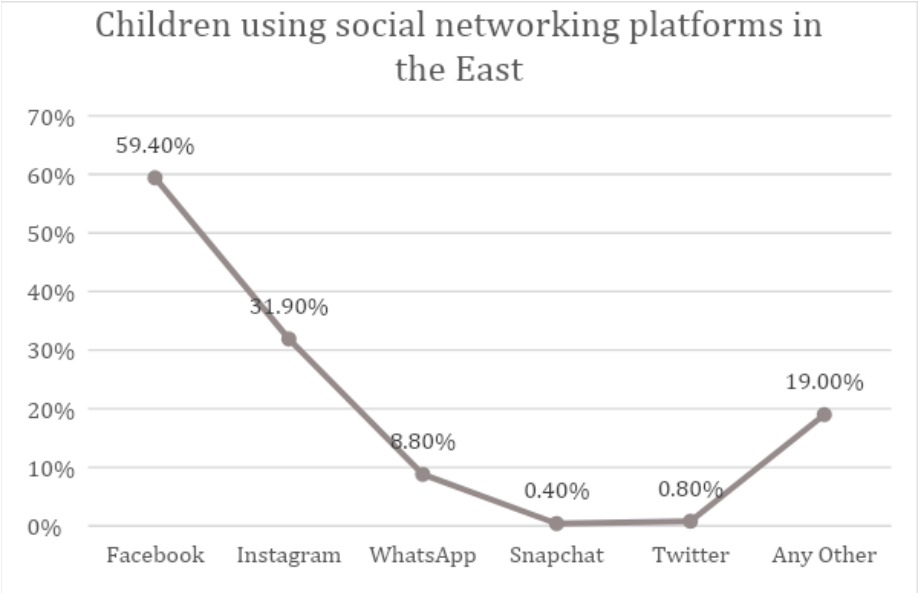


Fig. 41 East's Social Networking trend line

West: MAHARASHTRA

The West region has been demarcated by the city of Mumbai and the adjoining urban and rural areas, for the purpose of this study. In this region, around **40 percent of children have their own social media account** and **Facebook** is the **most popular** platform.

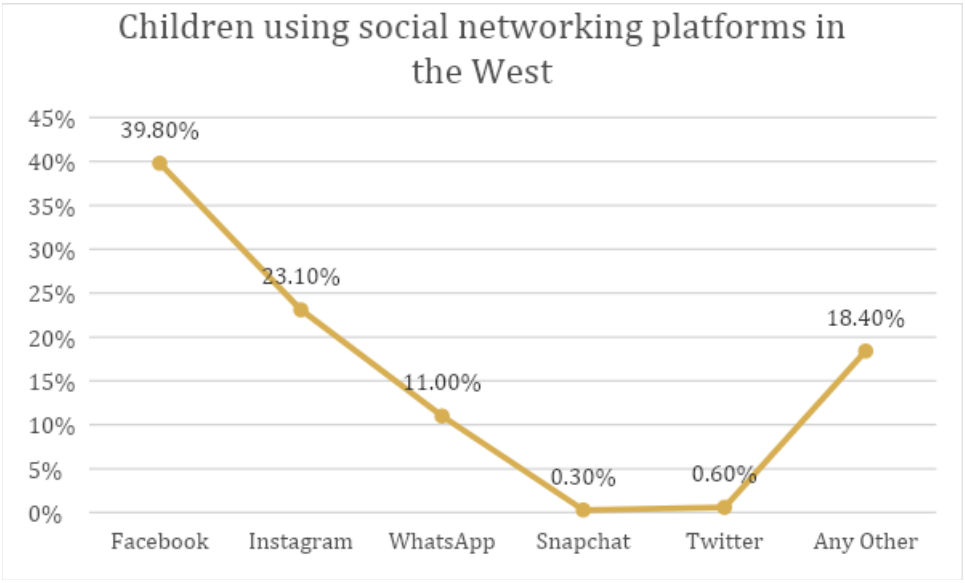


Fig. 42 West's Social Networking trend line

North-East: ASSAM

The North-East region has been demarcated by the city of Guwahati and the adjoining urban and rural areas, for the purpose of this study. In this region, around **47.1 percent of children have their own social media account** and **Instagram** is the **most popular** platform.

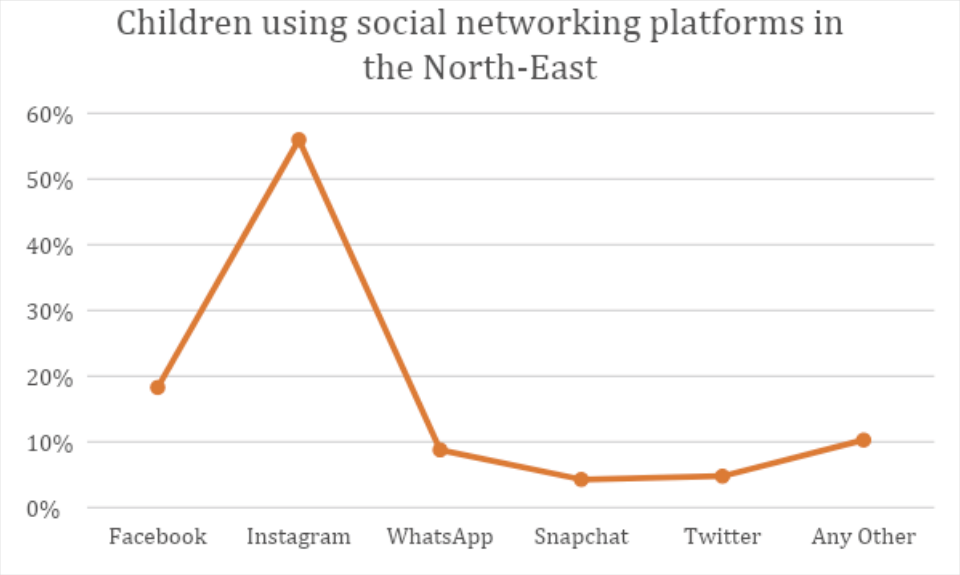


Fig. 43 North-East's Social Networking trend line

Recommendations

The study has indeed led to many new revelations and has helped define a baseline for the use of mobile phone and internet devices by children across the country. In the wake of the global pandemic, relevance, importance and need for such a study has exponentially magnified. Based on the findings of the study, a few of the critical recommendations are listed, if implemented; they could act as milestones in the path of securing a safe and healthy environment and holistic development of children, especially as they enter the virtual world. The recommendations are: -

- According to the American Academy of Paediatrics& World Health Organization, the screen time of young children should not exceed two hours per day. Also, adolescents should use digital devices under strict parental supervision. Parents and relatives of children have the onus of monitoring and limiting the use of digital devices. The parents need to interact with the children and discuss issues with them. This is of paramount importance for the psychological and social development of the child.

- A bigger portion of land in the communities needs to be identified as a playground for children. This will encourage the children to involve themselves in physical games and sports. Mobile gaming is taking a toll on the health of the children. Most of the children have a sedentary lifestyle which is leading to obesity and cognitive impairment in children. The interaction of children with other children will help in the development of imaginative and social skills.

- The smart phones have features like "Digital wellbeing and parental control" which can be used by parents to limit the hours of web surfing of children. It also helps to monitor and filter the content of the smart phones.

- For parents it is important to be a good role model for screen use by restricting screen media use except for professional purposes and especially in front of children. High parent screen media use in the form of television watching and Smartphone use reduces the opportunity of interaction with the child and has a detrimental effect on child development[4]

- Many children who are unaware of cyber-crimes share their personal data and information to unknown sources. Awareness programs to educate children about cybercrime and cyber bullying can be conducted in schools.

[4] Exposure to Smartphone and Screen media in Children and Adolescents and COVID-19 - https://jiacam.org/ojs/index.php/JIACAM/article/view/702/373

- Children need to be made aware about internet safety rules and instructed not to share any personal information on social media sites and encourage privacy settings. In certain cases, parents may also use strategies like media content blocking and filtering to filter/block inappropriate and unwanted content.

- In schools, the tasks and assignments should focus on life skills and practical knowledge. Creative assignments that compel the child to think out of the box will enhance the creativity and thinking ability of the child.

- Experts working for early detection and prevention of internet addiction at AIIMS Behavioural Addiction clinic suggest that parent's supervision of their child is of paramount importance. Parents must introduce other life skills to children to ensure reduction in screen time. The parents can encourage social interaction of the child.

- More internet de-addiction centres need to be established in the country, like AIIMS Behavioural Addiction clinic is working with the schools and universities to create awareness on the subject. Such workshops can be promoted.

- The National Commission for Protection of Child Rights (NCPCR) in its *Manual on Safety and Security of Children in Schools* has added a brief chapter on Cyber safety and Security in Schools by reviewing and compiling the existing literature (guidelines/handbooks) on cyber safety brought out by different agencies. This has been developed with the objective of providing a comprehensive overview of different aspects of cyber safety. These guidelines include the meaning of cyber safety and cyber security; common threats in cyber safety; Laws relating to cyber security. These guidelines should be circulated to all the schools and educational institutions for its implementation.

- "Schools should advocate, model and teach safe, legal, and ethical use of digital information and technology; promote and model responsible social interactions related to the use of technology and information. The National Council of Educational Research and Training (NCERT) has released a handbook on "safe online learning in times of COVID-19"[5]. The handbook is available at the official NCERT website — www.ncert.nic.in.

- Section (19) of the Protection of Children from Sexual Offences (POCSO), Act, 2012 has provision of mandatory reporting. In case the institutions, schools, parents, guardians, and organisations that are aware of any such objectionable use of their intermediary platforms they should be made accountable for reporting to appropriate authority under this section. Therefore, a mechanism could be introduced for incorporating this provision in POCSO Rules to ensure that

[5] https://ncert.nic.in/pdf/announcement/Safetolearn_English.pdf

online exploitation of children is reported on MHA portal cybercrime.gov.in. or any other such portal and proper awareness for reporting should be vastly propagated.

- It has been observed that the children use internet/social media apps over various connections such as Wi-Fi, mobile internet service, etc., the connections of which are in the name of their parents. Hence, there is no data on how many children are accessing the internet privately. Thus, if it can be considered that the connections should be given in the name of children by way of proxy accountability as in the case of bank account of minor, or else when parents purchase connection in their name for children, they should give a declaration that the connection will be used by the child, to ensure that the data can be maintained and children will not have access to such material. This can also help in providing filters and restrictions by service providers/intermediary platforms. Also, a report may be generated on a daily basis and forwarded automatically to the linked number/connection or email of the parent/guardian.

- Children are accessing social media platforms such as Twitter, Facebook, Instagram etc; tools for accessing dark & deep web which are available on these platforms. These platforms also provided the links to WhatsApp groups through which such material can be obtained and accessed. Thus, giving access to all including children to obtain such material. Whoever happens to download such content or material shall be mandatorily reported to appropriate authority under section 19 of POCSO Act, 2012.

- The Commission under section 13(1) (j) has conducted an inquiry into the spreading of Child Sexual Abuse Material (CSAM). Use of children in Child Sexual Abuse Material (CSAM) on social media platforms and access of children to pornographic content is a gross violation under sections 11(3) and 15 of POCSO Act, 2012 and a punishable offence. Such matters should be reported immediately for stringent action under the law. Therefore, as per the law child sexual abuse content needs to be mandatorily reported to the concerned authority which is Special Juvenile Police Unit (SJPU) or the local police (Including Cyber Cell Police).

- In cases where children use internet service of school at labs, libraries, etc. the service should be password protected and individual usernames/login ids should be provided to the students and the report should be sent to the school authority concerned.
