



# A STUDY ON IMPACT OF SMART DEVICES ON YOUTH'S LEARNING ABILITIES & PATTERNS

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## Abstract

An argument of 2 dimensions of these smart devices i.e. good or evil is not a concern for this research. As this research wants to study the generalised impact of the smart devices and technological advancement on the youth's learning patterns and abilities. These learning patterns are changing aggressively. Which can be analysed by the modern modes of education and high usage of the internet. Easy access to such devices and the internet has a dramatic and arguable impact on the current world. Various research and studies have been done in the past with various assumptions and arguments regarding such topics. But this research completely focuses on the impact of smart devices on youth's learning abilities and patterns. The impacts are subjective in such means; to generalise this the research focuses on the local sample size of 320 college students aged between 17-22 which is limited to Surat city. The results were able to satisfy the objectives of the research. As 42.18% of the respondents were into high usage of smart devices. 67.18% of total respondents were using these devices for purposes other than academic purposes such as entertainment, communication, browsing the internet or social media. 44.38% of them were dependent on these smart devices for their day to day life and various queries. Which clearly represents the decreasing memory span and weak recalling capabilities. 75.63% of them (with 2 different choices of answers) were not able to concentrate on the reading or study session of equal to or more than 2 hours/day. These 4 criterias of research provided a platform to make various assumptions from the data and to accomplish the objectives set for this research.

## Introduction

A technological boom is visible and obvious nowadays. From kids to millennials to the older ones, no one can be ignored if we talk about the usability of smart devices and its impact on their lifestyles. All of their activities are being generated and accompanied by today's technological structures. From learning to keeping informed, smart devices are taking over on the minds of youngsters. Smart perception can be built on the surface of great young minds (surface of minds may sound metaphysical) if the implication is precise.

Rejecting technology, in the name of so-called absolute & orthodox theoretical values would mean not paying attention to the modern reality and rejecting it. Rather paying attention to the synchronisation of both in a way that both can be praised equally is much more convenient to shape our future.

All this elaboration may lead to a sole conclusion that; smart devices are advancing the world. But negative impacts are also patently visible. This research is focused on the detailed probe of the question “***IMPACT OF SMART DEVICES ON YOUTH’S LEARNING ABILITIES & PATTERNS***”.

### **Important Definitions:**

**A learning pattern** is conceptualised as a coherent whole of learning activities that learners usually employ, their beliefs about learning and their learning motivation, a whole that is characteristic of them in a certain period of time. It is a coordinating concept, in which the interrelationships between cognitive, affective, and regulative learning activities, beliefs about learning, and learning motivations are united.

**Cognition** is a term referring to the mental processes involved in gaining knowledge and comprehension. These cognitive processes include thinking, knowing, remembering, judging, and problem-solving. These are higher-level functions of the brain and encompass language, imagination, perception, and planning. Cognition is responsible for each and every mental activity.

**Learning Behaviours** are learned actions that enable students to access learning and interact with others productively in the community. These behaviours are developed in and outside of school. Additionally, Learning Behaviours help with understanding and managing emotions, establishing and maintaining positive relationships, and making responsible decisions are essential life skills. They complement the curriculum content taught in the elementary grades and are a natural part of learning about oneself while interacting with others.

### **Focus of this study**

- **Positive points to be analysed:**

- Improvement in youth’s tactical knowledge - Tactical knowledge can be described in various ways. Here, we aim to exhibit *quick memory and information recall*. For example, one doesn’t have to remember the 12th prime minister of India was “Shri Inder Kumar Gujral”. We have a powerful always connected device in our pocket to search for the above query.
- Improvement in multitasking ability - Quite impossible according to psychology, but we’ve achieved multitasking ability to some level. If not, then it’s probably a quick switch between the cortex’s task handling. So that an improvement in the reflexes of humans can be noted without any doubt. Such as switching the tabs between social media and assignment writing.
- Improvement in comprehensive communication - Arguable point of discussion. But the fact is that we always need comprehensive communication in our everyday life. As we cannot deny the fact that it saves time as well as effort.
- A portal for skill development and variety of knowledge - An economist can be a professional coder if one wants to be. With the help of internet and digital courses, anyone can easily be a master in more than one field of knowledge. Depthness of the knowledge and skills is debatable.

- Increasing hobbies and fields of interests - If one can not be professional then at least interested in various hobbies. Such as skateboarding or graffiti can be a new interest of a professional doctor. Parkour can be opted as a hobby by an assistant professor.
- Improvement/Increasing short term and sensory memory - *Our memory works better in short bursts*. And youth is completely optimising this fact by constantly learning new things on the world wide web. As well as a short term memory and its recall is also improving as one has to constantly update his routine on social media along with communicating with his/her relatives and friends.
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- **Negative points to be analysed:**
  - Decreasing long term memory - As we all are now habitual to save and note everything digitally. Especially youth who are not even trying to remember anything. For example, *gen z people* don't even remember their parents' contact number. Searching every query online is not a sign that one is intelligent.
  - Decreasing longer study sessions - Learning everything in short bursts (Pomodoro technique by Francesco Cirillo in the late 1980s) can be helpful in multiple scenarios, but being habitual to it is harmful in every sense. As youth is not even attempting to sit for longer study sessions nowadays. More than half of the subjects of study need longer sessions to become a master in them.
  - Decreasing focus/concentration - Distractions due to smart devices are common in day to day life. Smart devices are truly creating hurdles in the maintenance of a healthy and productive routine.

## Current studies (Literature review)

1. **Impact of Smartphones on Young Generation - By Mudasir Rather (University of Kashmir) & Shabir Ahmad Rather (Govt Medical College Srinagar (GMC)) :** Smartphones are very important and wonderful communicative tools used by all age group people especially the Young generation. Without smartphones, one feels incomplete and it has become the need of the hour. It has brought a plethora of information resources within the palm of one's hand and has bridged the communication gap via social networking sites. People remain in touch and come to know every development in all walks of life within no time on social Media. The impact of Smartphones is visible in all areas of life including business, education, health, marketing, social life etc. But it is not out of place to mention here that every technology has its pros and cons within. It has also caused various health hazards and brought miseries to people especially children which include Eye strain, Neck and back pain, Hypertension, etc. The present study is an attempt to explore and examine the impact of Smartphones on the life of the young generation. A web based literature survey was carried out to find the objectives of the study. Various scholarly databases were accessed to find the most authentic and qualitative information related to the study.

- 2. The detrimental impacts of smart technology device overuse among school students in Kuwait: a cross-sectional survey - By Ali Jasem Buabbas, Madawi Anwar Al-Mass, Basma Awad Al-Tawari & Mohammad Abbas Buabbas :** This study included 3015 students, of whom 53.6% were female. The sample had an equal distribution of primary (33.8%), secondary (32.4%) and high school students (33.8%). Almost all of the participants (99.7%) owned a ST device, chiefly smartphones (87.7%). Most of the students used ST devices for > 4 total hours per day on average, which is categorised as “overuse”. Among those overusing ST devices, the symptoms most commonly experienced included headaches (35.0%), sleep disturbances (36.6%) and neck/shoulder pain (37.7%). Students who used ST devices for < 1 h per session experienced eye-related problems. Moreover, students who played sports on a regular basis were more likely to spend less time per session on ST devices. The prolonged use of ST devices was associated with higher reporting of seizures, eye squints and transient vision loss.
- 3. Smartphones, social media use and youth mental health - By Elia Abi-Jaoude, (MSc, MD) & corresponding author Karline Treurnicht Naylor (MPH, MD) and Antonio Pignatiello (MD) :**

  - a. Evidence from a variety of cross-sectional, longitudinal and empirical studies implicate smartphone and social media use in the increase in mental distress, self-injurious behaviour and suicidality among youth; there is a dose–response relationship, and the effects appear to be greatest among girls.
  - b. Social media can affect adolescents’ self-view and interpersonal relationships through social comparison and negative interactions, including cyberbullying; moreover, social media content often involves normalization and even promotion of self-harm and suicidality among youth.
  - c. High proportions of youth engage in heavy smartphone use and media multitasking, with resultant chronic sleep deprivation, and negative effects on cognitive control, academic performance and socioemotional functioning.
  - d. Clinicians can work collaboratively with youth and their families, using open, nonjudgmental and developmentally appropriate approaches to reduce potential harms from social media and smartphone use, including education and practical problem-solving.
  - e. There is a need for public awareness campaigns and social policy initiatives that promote nurturing home and school environments that foster resilience as youth navigate the challenges of adolescence in today’s world.
- 4. Impact of Mobile Phone on Youth: A Psycho-Social Study - By DR. SUNIL GUPTA (Assistant Professor, Department of Psychology, Zakir Husain Delhi College, (University of Delhi), Jawahar Lal Nehru Marg, New Delhi (India)) & DR. NAVIN KUMAR (Associate Professor, Department of Psychology, Bhim Rao Ambedkar College (University of Delhi), Main Wazirabad Road, Yamuna Vihar, New Delhi (India)) :** Media technology has become an integral part of children’s lives in the twenty-first century. The world of electronic media is changing at a fast pace. After television it has been joined by many other media resources like cell phones (mobile), iPods, video games, messaging, social networks sites and e-mail. Recently an Indian study of Mahakud and Bhola (2014) found that more male participants use social networking especially through mobile than their female counterpart in a study. The results especially indicate that higher age group peoples, particularly female participants more than to the lower age group. Similarly the comparison between age groups of participants in the present study indicates that higher age groups use more time mass



media, especially mobile, Internet and other media than to the younger age group. From the present study it can be concluded that, although the usage of mass media has positive effects on the well-being of users still, the negative effects of mass media cannot be neglected. Knowing the ethical guidelines and decent usage of mass media can be more effective for the users especially for adolescents and youth.

**5. IMPACT OF USING SMART PHONES AND COMPUTERS ON YOUNG GENERATION - By A. Srinivas (Assistant Professor, Chilkur Balaji Institute of Technology, Hyderabad) :** The findings of the survey are been given in the data analysis and it has found that:

- i. From all the above empirical analysis it is clear that the users who are using their mobile or device for maximum time are affected with one or more than one of the health distressing factors.
- ii. Apart from this it has been found that many users are affected and still are not going to put control on the usage of the device because they are unable to keep themselves away from it.
- iii. Users are not cautious about the consequences' that have to be faced by them if they cannot put any control on the usage of the device.
- iv. The users are keenly observed and found that they spend much of their time by using the device only for passing their time or to show the others about their status indeed though they do not have any work with the device.
- v. It has been found that the users are very much addicted to it, as they check the device frequently.

**6. The Impact of Internet Knowledge on College Students' Intention to Continue to Use the Internet - By Wei, Lu; Zhang, Mingxin :** Introduction: Examines the effect of Internet knowledge on college students' intention to continue using the Internet. Method: Students at four public institutions in Wuhan, China, were surveyed. They completed a questionnaire during the class hours. Analysis: Psychometric analysis was performed to assess the internal consistency, convergent and discriminant validity of the Internet knowledge construct. Path analysis was carried out with the structural equation program package EQS 6.1, to test the hypothesised causal paths among the constructs and the goodness of fit of the research model. Results: Internet knowledge is shown to be a reliable and valid construct, distinguished from Internet experience and Internet self-efficacy beliefs and has a significant effect on intention to continue to use the Internet. Conclusions: This study supplements the technology acceptance model with social learning theory and disentangles the relationships among Internet knowledge, experience and self-efficacy. The technology acceptance model is extended from a concern with adoption to continuous use of technology. The construct of Internet knowledge offers an opportunity to connect the technology acceptance model with knowledge gap and digital divide research, which are useful to inform future studies of technology acceptance.

**7. THE IMPACT OF INTERNET COMMUNICATIONS ON SOCIAL INTERACTION - By Thomas Wells Brignall III (Tennessee Technological University, Cookeville, Tennessee, USA) & Thomas Van Valey (Western Michigan University, Department of Sociology, Kalamazoo, Michigan, USA) :** The Internet is clearly on the way to becoming an integral tool of business, communication, and popular culture in many parts of the world. Computer Mediated Communications has a wide range of supporters and detractors. Some individuals argue the Internet will revolutionise social interactions, where others argue that the Internet will lead to loss of privacy, impersonal communications and isolation. There are also those who argue that the Internet is also being presented as a pedagogical tool for changing how public education is delivered. We believe that the Internet is a neutral social structural tool with several positive possibilities. However, the Internet's extraordinary growth is not without concern. Of particular relevance is the issue of the potential impact of the Internet and computer-mediated communications on the nature and quality of social interaction, especially among young people. This article is an analysis of the possible

consequences online communication might have on social interaction rituals. We focus on the current cyber-youth who have grown up with the Internet being a routine part of their everyday life and interaction rituals. A review of current research literature on online interaction and education use of the Internet reveals that in the United States a significant portion of youths are actively using the Internet as an important form of social interaction. This article explores what possible positive and negative outcomes may arise from cyber-youth using the Internet as a primary means of social interaction and how that might influence their development of their interaction ritual skills.

- 8. Understanding information systems continuance: The case of Internet-based learning technologies - By MoezLimayem & Christy M.K.Cheung :** Our research model expanded the Bhattacharjee's IS continuance model by adding a moderating effect (IS habit) to IS continuance intention and IS continued usage, postulating direct links between satisfaction and IS continued usage, as well as between prior behavior and IS continued usage. The model was tested with an Internet-based learning technology in a longitudinal setting. Data collected from 505 students were examined using partial least squares analysis. The results presented strong support for the theoretical links of IS continuance model, and for the new moderating effect. Both satisfaction and prior behavior were found to have significant impact on IS continuance. In addition, our findings confirmed the theoretical argument that the strength of intention to predict continuance was weakened by a high level of IS habit.
- 9. Negative and positive impact of internet addiction on young adults: Empirical study in Malaysia - By Syed Shah Alam, Nik Mohd. Hazrul Nik Hashim, Maisarah Ahmad, Che Aniza Che Wel, Sallehuddin Mohd Nor, Nor Asiah Omar :** *Purpose:* The purpose of this study is to explore and identify the impact of Internet addictions on young adults in Malaysia. There are six impacts identified, of which five are negative impacts and one is a positive impact.  
*Design/methodology/approach:* This study comprised a sample of 200 young adults in Malaysia. A cross-sectional research design was used to examine the impact of Internet addiction. Data were gathered based on personal administered questionnaires. *Findings:* Mann-Whitney U test results show that the adults those are using Internet excessively were having some problems such as interpersonal problem, behavioural problem, physical problem, psychological problem, and work problem in their daily life. The young adults believed that the Internet usage can help them to improve their skills for doing their work better. This study also reveals that males were likely having working problems, psychological problems, behavioural problems and interpersonal problems than female. On the other hand, females were having their physical problems while using Internet excessively.
- 10. Fast searching for information on the Internet to use in a learning context: The impact of domain knowledge - By Teena Willoughby, S. Alexandria Anderson, Eileen Wood, Julie Mueller, Craig Ross :** The purpose of the study was to examine the role of domain knowledge when retrieving and using information from the Internet as a resource for essay tasks, as well as to investigate the quality of Internet searches and its relation to essay performance. In two experiments, 100 undergraduates searched the Internet for 30 min and completed two essays; one in which they had high domain knowledge and one in which domain knowledge was low. Two control groups of 70 undergraduates just wrote the essays. Searching the Internet for information enhanced essay performance relative to the control groups only for the topic for which participants had high domain knowledge. In the second experiment, analyses of Internet searches revealed large individual differences in search behaviors and these behaviors did not relate to essay performance, although individuals highlighted the importance of domain knowledge in making their searches easier. Domain knowledge is one factor that educators should pay attention to when using the Internet for learning tasks, particularly when study time is limited, in order to maximize the ability of students to successfully retrieve and use information from the Internet.

## Research Methodology

- ❖ **Research method :** Exploratory research method - *Exploratory research is a methodology approach that investigates research questions that have not previously been studied in depth.* Psychology is one of the prestigious fields which provides a scope to study the topic in exploratory research methods. This topic needs to be explored in a structured manner to gain the depth knowledge on the positive as well as negative impacts as mentioned above.
- ❖ **Data collection method :** Structured close-ended questionnaire (Google form).
- ❖ **Sample size :** Due to the decent feasibility of digital questionnaires we're able to collect 320 samples of respondents (college students). All the respondents belong to Surat city and between the age group of 17-22.
- ❖ **Objectives :**
  - To understand the tactical knowledge of current youth;
  - To investigate the impact of smart devices on youth's long term and short term memory;
  - To examine youth's studying pattern and concentration after the extensive use of smart devices.
- ❖ **Data analysis :** Statistical distribution and percentage.

## Result and Interpretation

### *Descriptive Results:*

#### 1. Distribution of data according to the smart devices usage

> = 2 hours/day	2 - 5 hours/day	< = 5 hours/day
108	77	135

Collected data showed the expected results as 33.75% of the respondents were able to restrict themselves from using the smart devices for a longer period of time. 24.06% of the respondents were mediocre users of the smart devices. 42.18% of the respondents were into the high usage of smart devices. In the criteria of smart devices we've included smart phones, smart watches, music players with earphones, laptops, tablets and computers. Distribution of the hours of usage is based on the various literature which were studied during his research.

#### 2. Usage of smart devices for learning, studying and academics purposes

Academics, learning, studying or homework purpose	Any other use such as for entertainment, browsing the internet or social media, etc.
105	215

Data clearly represents that 32.82% of the respondents use their devices for academic purposes. 67.18% of the respondents use their devices for unnecessary purposes.. The data is collected in recent times; so that the effects of COVID lockdown can be eliminated. As all the education institutes are resumed with their offline classes and offline submission of assignments and homework.

### 3. Frequent online search for various queries, doubts and questions

<b>I prefer memorising most of the things and rarely use the internet for queries</b>	<b>Most of the time I need to confirm my self by querying online</b>	<b>Every time I need to Google everything</b>
<b>112</b>	<b>66</b>	<b>142</b>

35% of the respondents were confident about their memorising and recalling abilities. 20.63% of the respondents were less confident about their memorising and recalling abilities. As somehow they were using their smart devices for confirming themselves via cross querying the internet. 44.38% of the respondents seemed to be dependent on the internet and their smart devices for finding solutions to their day to day life problems, doubts and queries.

### 4. Study/reading sessions without the intervention of smart devices

<b>&lt; = 2 hours/day</b>	<b>1 - 2 hours/day</b>	<b>&gt; = 1 hour/day</b>
<b>78</b>	<b>126</b>	<b>116</b>

24.38% of the respondents were able to achieve a reading or study session of equal to or more than 2 hours. Which represents the less usage of smart devices. 39.38% of the respondents were able to achieve a decent 1-2 hours of reading/study session per day. Which represents a mediocre usage of smart devices. 36.25% of the respondents were not able to focus or concentrate on the study or reading for the time period of even 1 hour. This represents a high usage of smart devices in their day to day routine.



## Discussion

The data collected in this research; provides a clear and confident representation of our assumptions and objectives. As the results are clearly pointing out that the high usage of smart devices is impacting the learning behaviour of the youth. All the 4 criterias of the research are discussed as below:

1. **Usage:** The intensity of the role of smart devices in youth's life is increasing overtime. 135 respondents were into the high usage of these devices. An assumption of their unhealthy life routine and sleep patterns can also be made by this data as well as the literature of the research. High usage of the smart devices also impacts their mental ability and physical health.
2. **Purpose:** A purpose or the utility of these devices is also important for making the various assumptions regarding the youth's thinking and learning process. No doubt that the internet and access to these smart devices have created a global platform for learning new things and developing hobbies. But as per the data 215 respondents were not using their devices for any of the above mentioned purposes. This research is limited to the sample of Surat city's respondents and the results may vary for the different geographical populations.
3. **Frequency/memory span:** The memory span of the youth is undoubtedly impacted after the use and availability of the smart devices. 142 respondents were completely dependent on the internet for searching various queries. One of the 2 assumptions made out of this result is; youth is giving very less effort in memorising various things which affects their knowledge and learning capabilities. Second assumption is made that the youth is also emphasising on the information available online. Which may create various fake beliefs, ideologies and misconceptions about the world and themselves as well.
4. **Reading habits:** Reading habits or the study session represents the uninterrupted concentration on learning new things. 242 of total respondents have an equal to or less than 2 hours/day session of the same. Which shows that the smart devices have a clear impact on the learning patterns of the youth.

## Conclusion

Drawing a clear conclusion from this research is quite challenging. This research does not focus on the comparison of the various proportions of the youth but understands and analyses the impacts of smart devices and modern technologies on the youth as a whole. In this research the sample size is quite limited in the means of geography and variety of the respondents. As a strong belief it can also be said that the urban youth is more affected by this technological advancement than the rural youth. Which creates an opportunity to study this topic and expand the research for various sample sizes with various domains and categories. Young people who are curious about various new subjects and topics; are fond of such technological advancement. And want to explore them via using such smart devices. To conclude the results and the interpretation of

them; this research clearly shows that smart devices have an impact on the youth's learning abilities and patterns.

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