



SMART PHONE USAGE IN LEARNING & ITS IMPACT IN LIFE

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Abstract

Smartphones is an outstanding scientific invention and this magical device is an integral part of our daily life. The coronavirus disease 2019 (COVID-19) pandemic occurred in a time of this scientific progress and global digitalization; where smart phones become ubiquitous in our lives from education to clinical consultation. It helps us to stay connected with our family, friends, loved ones and society as well in variety of ways including: calling, Text/Messages, E-mail, video calling, public or social media. The various applications and components on a handset including gaming, social networking, electronic mailing, online payment, barcode scanning, calculators, weather report, text messages, Bluetooth, camera, MMS messaging, MP3 player and GPS have made users more and more tech informative. Offering an immense advantage to the public including learners, it has also spread its negative effects. There are some social, psychological and health effects of mobile phone users. The higher rates of mobile application usage by teachers and students significantly affected the self-regulation of behaviour, imposed negative aspects on meta-cognition and cognitive learning. This paper tries to explore impact of smart phone usage in learning and its effect among students as well. Moreover, it will look in the social, physiological, psychological, environmental effects among the students and describes strategies to be adopted to manage this.

Keywords: Smart Phone, Mobile usage,

INTRODUCTION:

In ancient times humans as well as animals used various communication signals to send messages like smoke signals, jungle drums, carrier pigeons and semaphores were used by humans to transmit messages from one place to another (Achary & Acharya, 2014). Even twenty years ago we depended on couriers for long distance communication. The first reformation was the invention of telephone by

Alexander Graham Bell in 1876. After this the technology that has revolutionized communication system in the 21st century was the smart phones. These phones provide an efficient and easy way to communicate with friends, family members, and co-workers. This wireless communication system has entered the varied sectors including primary to higher education levels. In a survey conducted in 2006, 90.9% of people in the developed countries and 32.4% of people in the developing countries owned a cellular phone (ITU, 2006). 91 % of American adults and 60 percent of teens own this device. The smartphones make students' life more accessible that they can have online books, journals, learning material right on their phones. Additionally, schools could also build online resources named school information management systems for students accessing useful information whatever they want. Moreover, covid 19 created an enormous challenge in learning on a global scale and here also this magical invention has able to meet that challenges of teaching learning process and encouraged the whole education system to work without any stagnation. In many ways, smartphones are a great tool to stay in touch with people, especially if you live far away. WORK FROM HOME concept is developed due to smart phone in some extent. Moreover, it helps with organization, help in emergencies, provides a wealth of access to information, resources for health and wellbeing, photography, registering contacts, calculator, currency conversions, alarm, video chat, mobile payment for goods or services, barcode scanning and so on. Offering an immense advantage to the public including students of all the levels, it has also spread its negative effects which are unavoidable.

India, there is high demand of smart phones among people, especially in college and university students. In Indian college and university teens generally send 50 messages per day. Teen typically makes or receive average 5 calls a day and 200 calls per months. Campbell et al, (2006) studied the various aspects of mobile usage by teenage girls which showed that there were many negative factors along with the advantages. The abundant applications and components on a handset including gaming, social networking, electronic mailing, clocks, calendars, calculators, weather report, SMS (or text) messages, Blue-tooth, camera, MMS messaging, MP3 player, radio and GPS have made users more and more tech savvy. The convenience provided by smart phones is the only reason why there has been an increase in its usage. This dependency and heavy usage are the only cause of smart phone addiction. In response to a question about mobile-phone addiction, one out of three students said that they felt addicted to their phones (Katz, 2005). Although, this revolution in technology has its positive effects on the economy as well as on the development of the country, it has its negative sides on various forms of human life. These effects not only create health hazards but also extend its hands to psychological, environmental, cognitive and social sides. In different surveys and studies by the World Health Organization (WHO) give immense information about the various effects of smart phones on human health as well as mind. According to WHO, smart phones use transmitting radio waves through a series of base stations where radiofrequency waves are electromagnetic fields that cannot break chemical bonds or cause ionization in the human body, although smart phones are considered to be low-powered radiofrequency transmitters, the handset transmits power when it is on, and therefore it is important to increase the distance from the handset to reduce radiofrequency exposure. But in many researchers it is found that smart phone has high effect in human body as well as human life. The

smart phones, towers and Wi-Fi networks are harmful regarding health issues including brain aging, brain damage, DNA damage and sperm die-offs.

EFFECTS DUE TO EXCESSIVE USE OF SMART PHONES:

Physiological Effects

Several studies unfold that there has been a negative effect on human health due to excessive use of smart phones. Hence, the Federal Communications Commission (FCC) advised smart phone users to keep a minimum distance of 20 centimetres from their handset to significantly reduce radiation exposure. Effect on the Immune System Now-a-days, most of the students are not at all aware of the fact that their incessant usage of their smart phones can create a toll on their immune system. The continuous touching of phone harbour germs on their handset. At the London School of Hygiene & Tropical Medicine and Queen Mary, University of London, researchers studied 390 smart phones and hands to measure for levels of bacteria. The results showed that 92 percent of the smartphones sampled had bacteria on them - 82 percent of hands had bacteria - and 16 percent of smart phones and hands had *Escherichia coli*, a bacteria isolated from faecal matter. The greasy, oily residue found on smart phone after a day's use can contain more pathogenic germs than those found on a toilet seat. For increases Risk of Chronic Pain smart phone is mainly responsible (Achary & Acharya, 2014). Responding to messages at rapid speed can cause pain and inflammation of user's joints. Back pain is also common with increased smart phone use, especially if one keeps the phone between neck and shoulders while multitasking. Long-time smart phone user suffers from arch and back pains. The Swedish scientists Stefan; Ahlbom, Anders; Hall, Per; Feychting, Maria at the Karolinska Institute conducted an epidemiological study (2004) on the effect of mobile phone on human body. They suggested that regular use of a smart phone over a decade or more time was associated with an increased risk of acoustic neuroma, a type of benign brain tumour. Increases Risk of Eye Vision Problems The extreme use of mobile device can cause visionary problems. Screens on smart phone devices tend to be smaller than computer screens which are the cause of eyes strain while reading messages. According to the Vision Council, more than 70 percent of Americans don't know or are in denial that they are susceptible to digital eye strain. Carcinogenic. In 2011, International Agency for Research on Cancer (IARC) classified smart phone radiation possibly to be carcinogenic. This means there "could be some risk" of carcinogenicity, so additional research into the long-term, heavy use of smart phones need to be conducted. Studies on cancer reveal that radiation is one of the agents that induce programmed cell death. Although an increased risk of brain cancer is not established from the data from the 13 nation INTERPHONE project, observations from the study on especially young people had led to controversies whether smart phone use and brain cancer risk are related. The excessive use of smart phone is always avoidable. In 2007, Dr. Lennart Hardell, from Örebro University in Sweden found that smart phone users had an increased risk of malignant gliomas besides, Tumours are more likely to occur on the side of the head that the smart phone handset is used.

One hour of smart phone use per day significantly increases tumour risk after ten years or more. Effect on Human Reproduction Studies indicate that youth students who carried their phones in a pocket or on the belt were more likely to have lower sperm counts and/or more inactive or less mobile sperm.

According to different studies it has come in front that exposure to smart phone radiation may lead to decreases in sperm count, sperm motility and vitality. It increases sperm damage such as higher levels of reactive oxygen species (chemically reactive molecules containing oxygen), oxidative stress, DNA damage and changes in sperm morphology (IARC, 2011).

Psychological Effects :

The effects of smart phones have also extended into the human psyche. The researchers at the University of Essex in the United Kingdom, conducted two studies on the effects of a mobile device during a nose-to-nose conversation. In one of the studies, 37 pairs of strangers were asked to spend 10 minutes talking to each other about an interesting event that happened in their lives within the past month. Half of the participants were seated in a secluded area with a mobile device present on a desk nearby whereas the other half remained without a smart phone. The results of the study showed that those who had a mobile device nearby were perceived less positive by the stranger, compared to the other participants without a smart phone present (Campbell and Rachel, 2006). . Researchers at the University of Gothenburg, Sweden, found high smart phone use was associated with stress and sleep disturbances for women, whereas high smart phone use was associated with sleep disturbances and symptoms of depression in men. The conclusion that can be drawn from the above studies is that excessive use of smart phone can be a risk factor for mental health issues in young adults (Achary & Acharya, 2014).

EFFECTS ON LEARNING

Studies exploring the effects of texting and posting by students on their learning outcomes, have argued that texting can cause distractions and hamper students' learning. In typical classroom situation, researchers observed that texting/ posting could suppress students' ability of listening. Research conducted by the Pew Internet & American Life Project observed that 14-17- years old students who texts roughly 60 messages per day. Moreover, 64% of teen students with smart phones have texted during the class lectures. Studies exploring the effects of texting and posting by students on their learning outcomes, have argued that texting can cause distractions and hamper students' learning. In typical school/ college classroom situation, it has been observed that texting/ posting could suppress students' ability of perception as well as learning. Research conducted by the Pew Internet & American Life Project observed that 14-17- years old students who texts roughly 60 messages per day. Moreover, 64% of teen students with smart phones have texted during the class lectures and 23% access SMS via their smart phone (Lenhart, 2010). In brief, information processing identifies attention, working memory, short-term memory, long-term memory and meta-cognition as key resources used by the individuals when they learn something new. Since learning is a process of multi aspects, a disturbance in one may affects the other. A study by Champbell (2006) showed that message texting and telephonic conversations were equally problematic for both students and instructions. Similar studies conducted by Wei et al. (2012) found that higher rates of mobile application usage by students significantly affected the self-regulation of behavior, imposed negative aspects on meta-cognition and cognitive learning. In an experiment by Wood et al. (2012), it was observed that students engaged in message texting, e-mailing or Face book posting in their mobiles showed a negative effect on

exam performance. The constant use of text messages on smart phone, contributes to the poor usage of proper English by college and university students.

ENVIRONMENTAL EFFECTS

The smart phone making is dependent on some natural resources like crude oil, copper, gold, palladium, and silicon and also requires considerable amounts of energy and water which generates pollution and waste. It is estimated that over 220 pounds of mine waste is generated to extract the gold for a circuit board of just one smart phone. Due to Manufacturing Components Researchers observed that smart phone's negative environmental effects occur during the manufacturing process. Smart phone consists of 500 to 1,000 components that must be shaped and fitted together in polluting industries. The United Nations Environment Programme estimates that the manufacture of a smart phone produces about 60 kg of CO₂e and that using a smart phone for a year produces about 122 kg of CO₂ equivalent. Swiss researchers found that 40-50% of the environmental impacts over the entire life of a smart phone occur during the single process of manufacturing printed wiring boards and integrated circuits. In just one year, one smart phone uses the energy equivalent to 32 gallons of gas and emits 112 kilograms of carbon dioxide (CO₂). Moreover, even when there is no smart phone connected to them, smart phone chargers can draw about half a watt of power. Land Filling or Recycling The average consumer, mainly youth students enjoy their mobile phone for less than two year before getting a new one. In the time of replacement, people think whether to recycle it or send it to a landfill where toxic substances can get into the environment i.e. soil, water and air. Every year, near about 140,000,000 smart phones (that's 4 per second!) will make their way into a landfill, where they will collectively leach 80,000 pounds of lead into the earth and groundwater supply of surrounding communities (Achary & Acharya, 2014).

SOCIAL EFFECTS

The use of smart phone effects social life. In the name of socialization, it brings some hazards in social life. It was found that cell phone use may be associated with becoming less socially minded and less likely to engage in pro-social behaviour. It is observed that after a short period of smart phone use, the young students were less inclined to become a volunteer for a community service activity practically. The Atlantic reports said that the smart phone users were also less motivated to solve word problems, even though they knew coming up with the answer would translate into a monetary donation to charity. To explain this phenomenon, author and marketing professor Rosellina Ferraro says: "The smart phone directly evokes feelings of connectivity to others, thereby fulfilling the basic human need to belong." It means once the need to connect with others is met; our desire to feel empathetic or engage in behaviour that would help others is reduced. Interestingly smart phone users think that they are surrounded by social groups or friends. But the bitter reality is that friends of Instagram, Facebook, Twitter may not be real and in the time of need the person himself may be alone and depressed. Sex texting is not uncommon in our society where smart phone teen users transmit and share inappropriate messages or images among other friends which is not sociable attitude at all. Moreover, Cyber bullying and fraud is another component of abasement. It can be used to

harass others causing grief that may take weeks or months to overcome by the "victims". These are all the bad effect of smart phone use on Pro-social Behaviour

RECOMMENDATIONS

In majority of studies it has been found that smart phones, towers and Wi-Fi networks are harmful regarding health issues including "brain aging," brain damage, DNA damage and sperm die offs. So, College teens and university students should be concern about these. According to the WHO, the "precautionary principle" is "a risk management policy applied in circumstances with a high degree of scientific uncertainty, reflecting the need to take action for a potentially serious risk without awaiting the results of scientific research. We should follow some precautionary ideologies in this regard. There are some recommendations such as the minimization of smart phone usage.

- Use hands-free or headphones to decrease the radiation to the head and to keep the smart phone away from the body.
- Do not use smart phone in a car without an external antenna.
- Youth should be more responsible to protect our environment. Therefore, consciousness should be created among learners regarding its negative effects on environment through different educational awareness programmes.
- Extending the service life of one's mobile phone from one to four years decreases environmental impact by about 40% and also limits the number of resources that must be mined to make new phones. Thus, one can also donate used cell phones to charities that will put them to really good use!
- There is a need of propaganda through various media (printing and online both), social networking sites for the sake of the world against the negative side of smart phone usage.
- There is a need of seminars and workshops in educational institutions with the help of government. There is a need to establish policy making central committee and information units regarding the usage of smart phone. As the participatory forces NGOs can play a vital role in rural areas.
- The threaten of corona virous is almost over so normal education should be started as early by maintaining government protocol.
- By recycling mobile phone, one can help in decreasing pollution.

CONCLUSION:

In the conclusion we can say that in our daily life we should interact more with each family members. In dinning table, we talk about our daily happenings of office, school, college. We parents should show interest in different issues of our children to avoid less use of smart phones. Infact, we should help our children to take the benefits of smart phone in fixed schedules of the day, moreover, distracting apps should be deleted from the phones and avoid the smart phones at night time. At the same time Govt. should conduct more and more seminars, workshops in this context with school, college students. If we want to manifest a better society then we should provide our young learners better learning experiences related with nature not with technology completely.

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