

IMPACT OF MOBILE PHONE USAGE ON THE ACADEMIC PERFORMANCE OF STUDENTS

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ABSTRACT

In the 21st century, mobile phones have become one of the best gifts of technology. Young people are the most avid users of mobile phones. Mobile phones today have infinite resources that can be used in various ways for various purposes. Students' behaviour may change as a result of excessive use of mobiles, affecting their academic performance.

According to the study, mobile phone usage has increased. During classes, students stuck to this device, thus affecting their academic performance. In addition, the results indicate that the use of mobile phones has become an addiction among young people. This study aims to investigate the relationship between mobile phones and behavioral modifications among students and their academic achievement. Even before the pandemic, it was important for students to use their phones for education. Instead of making xerox copies, students carry digital notes on their phones. When they want to take a survey, it's easier. Most importantly, using a mobile phone to conduct research for a project when you don't have access to a computer or laptop is extremely convenient. It is safe to assume that some of the eLearning platform's trends will continue even in the post-pandemic world because of the pandemic's complete shift from offline teaching to eLearning. The use of digital notes, pre-recorded lectures for revision, and the use of Google Forms for online tests are trends. The internet is one of the readily available sources of knowledge in today's diversified knowledge environment. Students who always carry a mobile phone can check out information more engagingly, which will accelerate their learning. The student has the ability to immediately dispel any doubts they may have had regarding something the instructor was teaching. There are so many apps for students in the App Store that the student can get help with a subject in which he or she is lacking.

The primary goals of the study were as follows: to ascertain the students' perceptions of how simple it is for them to use a smartphone for learning purposes, to ascertain the students' perceptions of how useful a smartphone is for academic achievement, to ascertain the impact of smartphone use on students' learning activities, and to ascertain the factors that prevent students from using smartphones as learning tools.

As a result of the New Education Policy's changes to the technology and educational system, the findings showed that the use of mobile phones for educational purposes is essential for improved student performance. In this technologically advanced world, numerous educational apps developed by app development firms that also support mobile devices are essential.

Methods: A survey-based study has conducted among randomly selected Graduate students (N=190), 89 males and 101 females, in the age group of 17-25 years. For this study, selected students from various courses such as Bcom(60), Bsc(18), B.A(36), BCA(61), Bvoc(15). In this study, the test of mobile dependence was used to assess the dependence on mobile phones, while the LIKERT scale was used to evaluate the behavioral changes based on self-reports.

Keywords: Mobile Phones, Academic Performance, Addictions, Youngsters, Goa, Technology, Gaming, Mental Health

Introduction

The mobile telecommunication industry has grown rapidly in recent years, systems have grown significantly mobile phones have become an essential part of daily life almost everyone enjoys it. Young people are always the first to learn about new technologies. Smartphones have changed the way people communicate with one another and how they do business.

Their academic and social lives are greatly influenced by it. Students' learning has been affected by mobile phones in almost every field of life, especially at the college level. As time passes, technology's darker side is also revealed. There are both positives and negatives to mobile devices when it comes to human health and behaviour. Impacts and effects that are positive and healthy include the ease with which students can communicate with their teachers and classmates as well as their parents. In Ansari's view, it has both negative and positive effects.

Students' performance is adversely affected by unhealthy impacts and effects. Time and resources are wasted at the university level, including money. Health risks may be associated with its vibration and use. According to Awaz, Sir William Stewart wrote In the book "Mobile Phones and Base Stations", it is mentioned that exposure to radiofrequency causes great absorption of energy in the tissues of the head which is harmful to the nervous system. The vibration of a mobile phone also affects Blood pumping. Skin problems can also be caused by the heat from mobile phones.

Problem Definitions

Over the last few years, students all over the world have become increasingly dependent on their mobile phones. Due to the Pandemic situation, many institutions come under online mode. The use of mobile phones influences how much time students spend on mobiles and how it affects their academic performance. So this paper analyses the impact of mobile usage academically.

Literature Review

Noah (2019) in his study found that Smartphone use is gradually becoming a compelling learning tool for improving distance education teaching and learning. When used, it makes it possible for students to interact digitally, access online learning platforms, access course resources, and ensure flexible course delivery. This study was conducted at the University of Ghana to investigate the use of smartphones as a learning tool for distance education and its effects.

Kaur (2018) in his study found that students' academic performance may suffer as a result of their reliance on mobile phones during class. Additionally, the findings indicate that young students have developed a smartphone addiction.

Hossain (2019) in his study found that as mobile phone technology continues to advance at a rapid rate, it appears that the device can help students learn and perform better in school. For instance, today's "smartphones" give students instant, portable access to many of the same education-enhancing features as a computer connected to the Internet, such as file sharing, online information retrieval, and interacting with professors and other students. The majority of respondents used their phones for study, indicating that a cell phone is an essential study tool. The study shows that interactive, multi user functions, which can sometimes be disruptive or beneficial during research, are frequently used on mobile phones, making them one of the most popular information access devices.

Siew (2017) in his study found that this study looked at how students at one university in Malaysia use smartphones to help them learn about school and how these activities affect CGPA. 176 students from three academic programs recorded their daily smartphone use for learning for seven days. Smartphone usage was found to vary significantly from academic program to academic program. In addition, it was discovered that students had lower CGPAs when they used their smartphones for university learning activities. The findings of this study suggest that tertiary students' instructional uses of smartphones need to be evaluated and better understood.

Manda (2017) in his study found that The advent and spread of technology in the modern era has demonstrated a variety of communication tools, methods, and resources that enable connectivity at any time in a virtual environment. An emerging "mobile youth culture" is being fuelled by the fact that wireless communication has emerged as one of the media with the fastest spread on the planet. We also observe that the situation is similar in India, with people of all ages, educated or illiterate, from both urban and rural areas; currently dependent on a mobile phone. Due to the enormous rise in mobile phone usage worldwide, the health effects of mobile phone radiation have been the subject of recent interest and research. The purpose of this study was to determine whether college students in Kolkata were aware of the health risks posed by mobile phone use and the pattern of dependence on them.

Yadav (2021) in his study found that One of the best technological presents of the 21st century, mobile phones are particularly popular among adolescents. Mobile phones today have an infinite supply of resources that can be used for a variety of purposes. Adolescents may exhibit behavioural changes and lower academic performance as a result of excessive use. The purpose of this study is to investigate the connection between adolescent educational achievement and mobile phone use and behavioural changes.

Grewal (2020) in his study found that People of all ages, particularly young people, have developed a significant dependence on mobile phones for a variety of reasons as a result of mobile phone culture. Students who also use

mobile devices for academic purposes now routinely incorporate it into their work. The purpose of this study was to determine how mobile phone use affected the health and academic performance of MBBS students.

Rabiu (2016) in his study found that gender was also not a significant factor in mobile phone usage on academic performance among senior secondary school students, parent's occupation was not a significant factor in mobile phone usage on academic performance among senior secondary school students, and that, the frequency of mobile phone usage does not significantly influence academic performance among male and female senior secondary school students. Mobile phone usage significantly influences academic performance among male and female senior secondary school students.

Anjali (2021) in her study found that mobile phone use has a significant impact on senior secondary school students' academic performance; age differences did not have a significant impact on senior secondary school students' academic performance; gender did not have a significant impact on senior secondary school students' academic performance; socioeconomic status did not have a significant impact on senior secondary school students' academic performance; and mobile phone use does not have a significant impact on senior secondary school students' academic performance.

Mukhdoomi (2020) in his study found that due to the overreliance on technology in every aspect, smartphone addiction is growing like it was in youth. As a result, it is necessary to conduct thorough and consistent research to determine whether smartphone addiction is beneficial to students or detrimental to their academic performance. Numerous future researchers have conducted research in this area on a variety of populations and discovered both positive and negative correlations between academic performance and smartphone addiction.

Objectives

- A study is being conducted to determine the extent to which mobile phones are used and depend on Their impact on the academic performance and behavior of graduate students.
- The goal is to determine the extent to which mobile phones are incorporated into students' lives.

Hypothesis

Ho - Students' performance was affected by their use of mobile phones

H1 - Mobile phones are important gadgets in our current technological age, so they are helpful for academic purposes

Research Methodology:

According to the requirements of the present topic, 190 graduates from different colleges under the Goa University were surveyed. A survey was conducted among college-going youngsters to find out How mobile phones affect their academic performance and how they use them.

Data Interpretation and Result

The analysis below shows how many students spend time on mobile devices during their daily routine

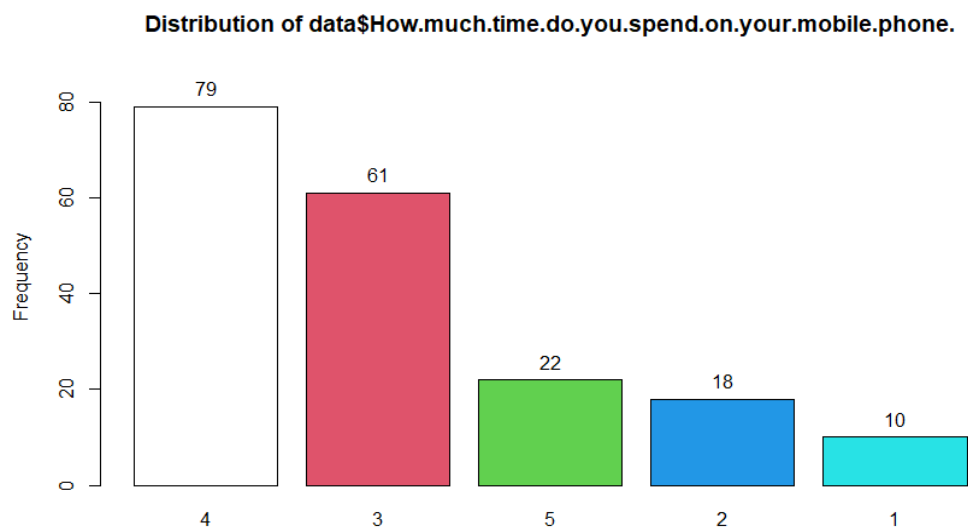


Figure 1: How much time user spend on mobile phone

Above figure indicates how much time students spend on mobile phones. 22 students use mobile phones max time, 79 students spend time as per need, 61 use as per need, 18 students use as per need for study, 10 people use mobile for a short period of time.

Distribution of data\$How.often.do.you.check.your.mobile.phone.

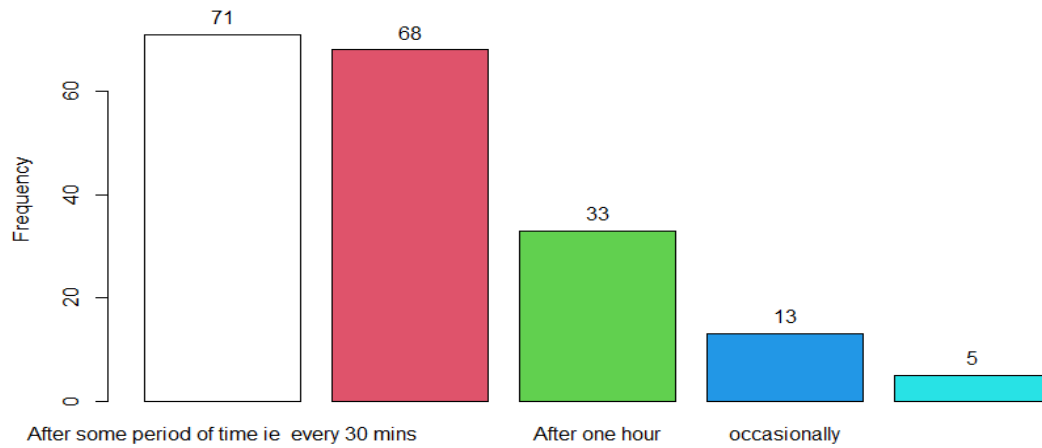


Figure 2: How often user checks his/her mobile phone

Figure 2 indicates 71 students check the mobile phones after 30 mins .68 students also use a mobile phone, 33 students use mobiles after one hour and 13 students use mobile occasionally.

Distribution of data\$In.a.day..how.much.time.do.you.spend.on.mobile

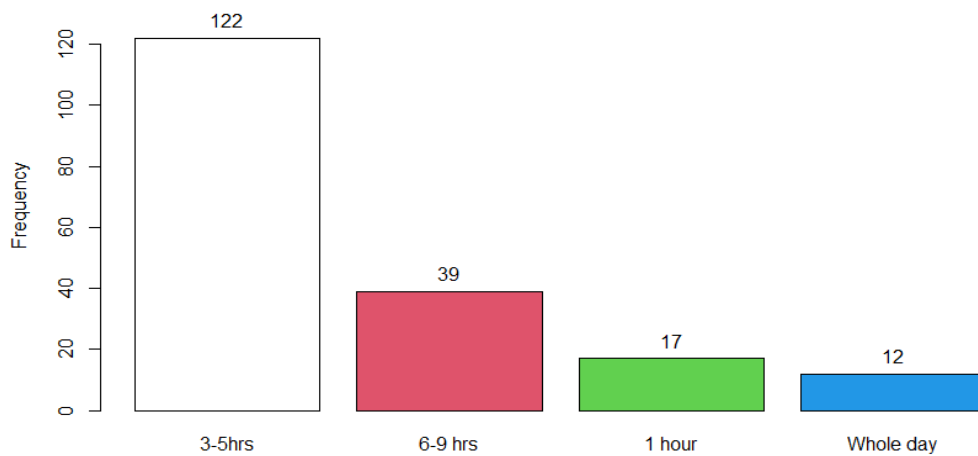


Figure 3: How much time user spend on mobile

Fig 3 indicates 39 students spend 6-9 hrs on mobiles , 122 students spend 3-5 hrs on mobiles, 17 students spend 1 hrs on mobile , whereas 12 students spend on mobile for the whole day .

Figure 4: Distribution of data\$What.is.your.opinion.about.the.continuous.use.of.mobile.distract.your.attention.f

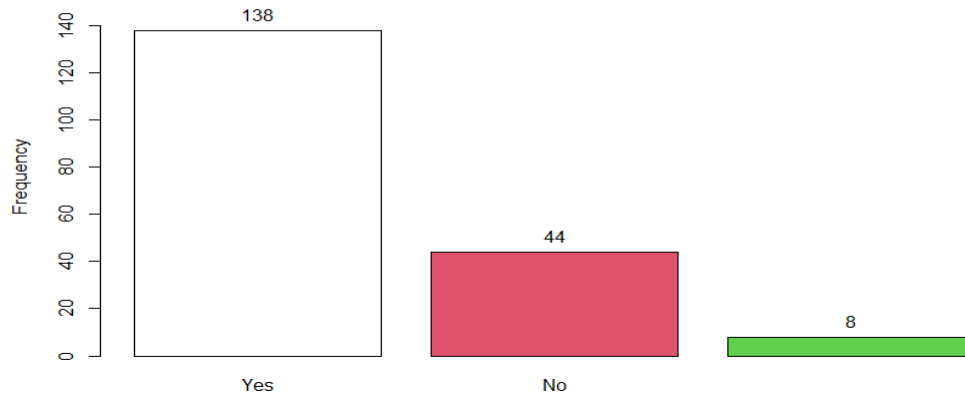


Figure 4: Your opinion continuous usage will distract in attention

Figure 4: 138 students say continuous usage of mobiles distract the attention from studies whereas 44 students feel mobile never distracts attention in your studies.

Distribution of data\$Checking.of.mobile.phones.on.a.daily.basis

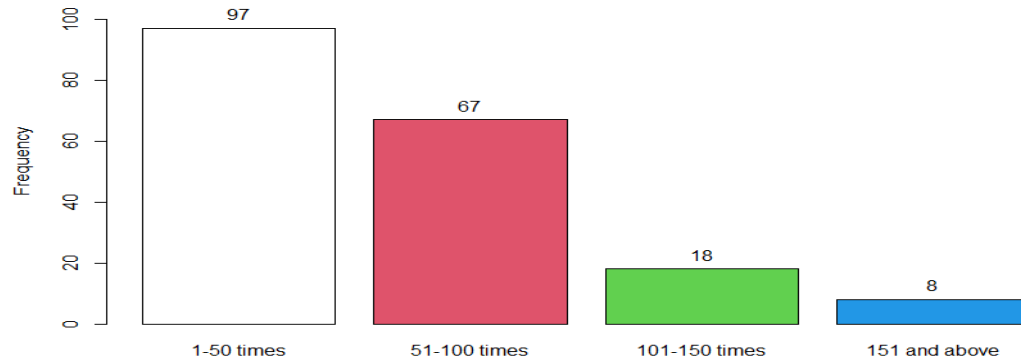


Figure 5: checking mobile phone on daily basis

Fig 5 indicates that 97 students check their mobile 50 times , 67 students check their mobile 51-100 times , 18 students check mobiles 101-150 times and 8 check mobile more than 150 times.

Figure 6: Distribution of data\$Approximately.how.often.does.it.occur.using.a.mobile.phone.in.class.affect,

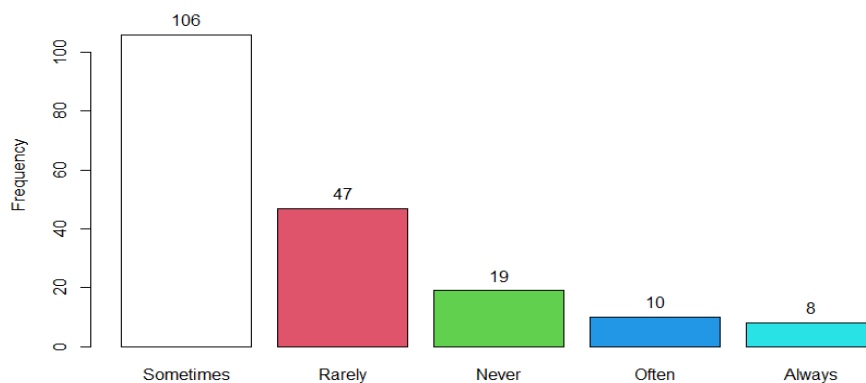


Figure 6: Usage mobile in the classroom

Figure 6 indicates 10 students feel usage of mobile phones in class affects their learning.8 Students feel its effecting to use mobiles in classes. 106 students use mobiles in class sometimes, 47 said never and 19 never used mobiles.

Distribution of data\$In.what.ways.are.mobile.phones.used.in.class.to.assist.students.with.the

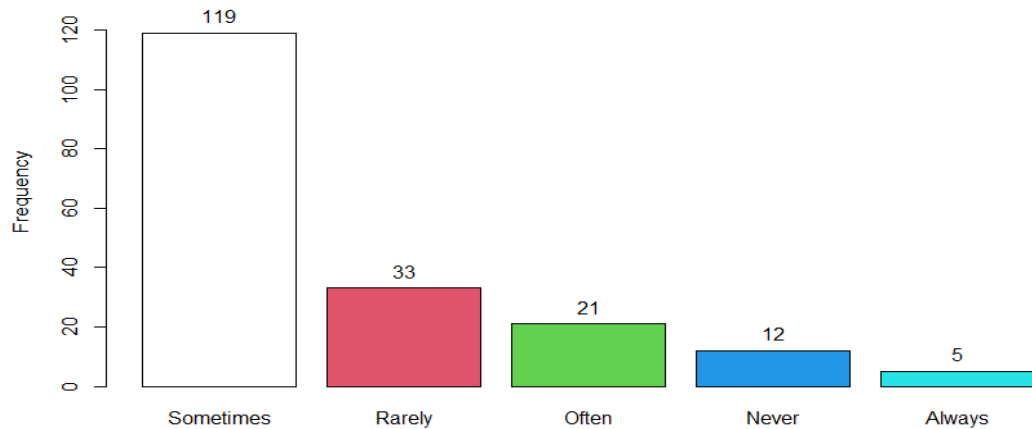


Figure 7: mobile phone usage in class to assist students in learning

Figure 7 indicates that mobile phones are used in class to assist students with their learning, so 119 students sometimes use the mobiles ,33 students used rarely ,21 students used often ,12 students used never and 5 students say always.

ata\$Have.you.noticed.any.recent.calls.or.messages.received.prior.to.class.having.an.impact.o

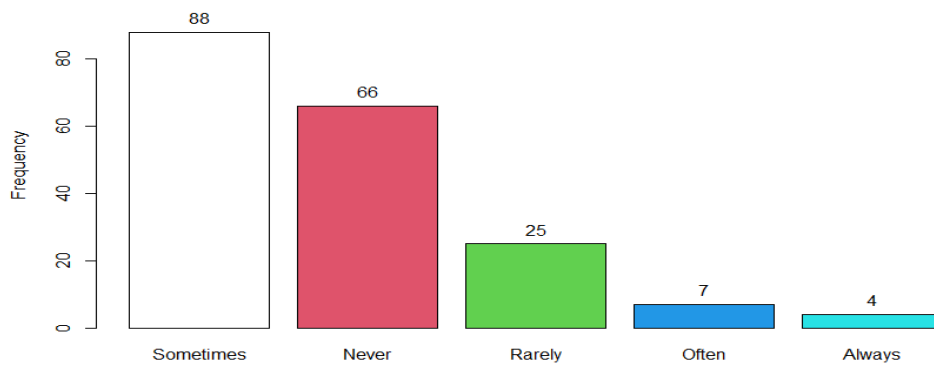


Figure 8: Recent call or message in class

Fig 8 indicates the effect of the message before class 7 students say often such impacts occur. 4 students say such problems always occur , 25 students say rarely such impacts due to messages occurring. 66 students never had such problems whereas 88 students face such problems sometimes.

Distribution of data\$During.study.time..how.often.do.you.use.your.mobile.phone.

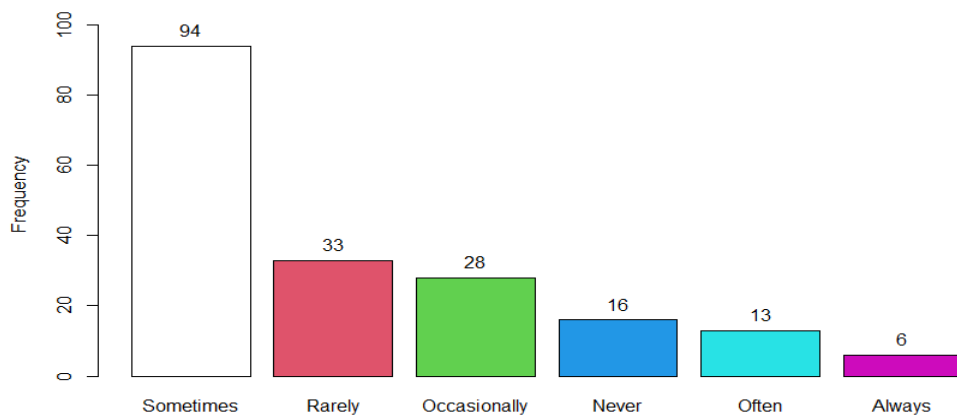


Figure 9: During study time how often a user uses a mobile phone.

Figure 9 indicates 6 students always use mobiles during study times , 13 students often use mobiles during study times,94 students sometimes use mobiles phones during study times.16 students never used mobiles during study times. 28 students used mobile phones during class occasionally whereas 33 students rarely used mobile phones during study times.

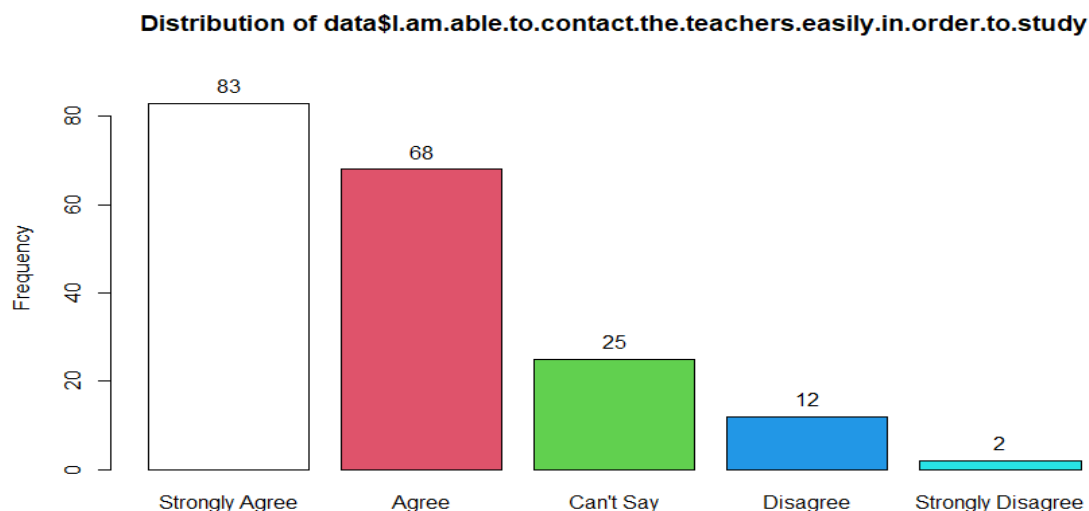


Figure 10: Mobile phones help to contact teacher

Figure 10 indicates contact teacher easily due to mobiles due to any queries: 83 students strongly agree for the same.68 students agrees that mobile plays important role to connect with teachers.25 Students can't say about teacher's approach due to mobile, 12 students says they can't guarantee about the status due to mobile phone they connect to mobiles and 2 students strongly disagree about usage of mobiles phone stop to connect the teacher easily in order to study

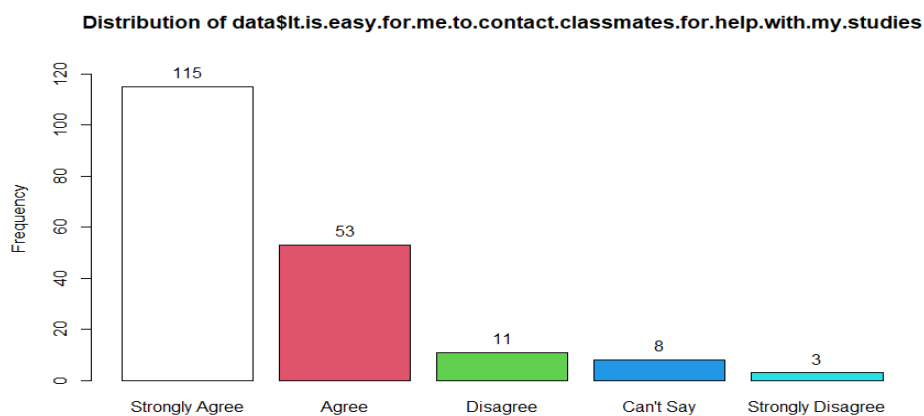


Figure 11: mobile helps to contact classmates for studies

Fig 11 indicates 115 students strongly agree to contact their classmates, 83 students agree to connect .11 and 3 students disagree and strongly disagree.

Distribution of data\$As.a.result.of.mobile.technology..my.academic.performance.has.improvi

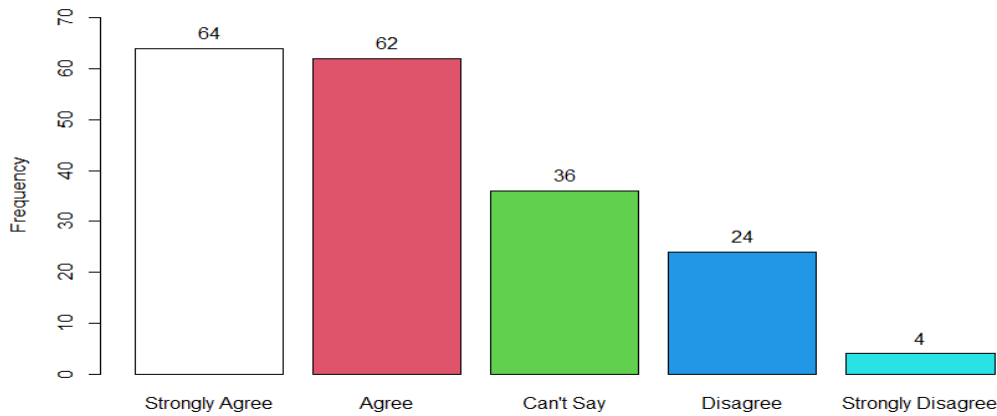


Figure 12: Mobile technology improves performance

Figure 12 indicates, 64 students strongly agree that as per mobile technology performance has improved. 62 students agree that mobile usage helps to improve in performance. 36 students can't say about the status. 24 students say that mobile usage does not help to improve the performance. 4 students strongly disagree with the statement.

Distribution of data\$Education.has.been.improved.by.the.use.of.mobile.phones

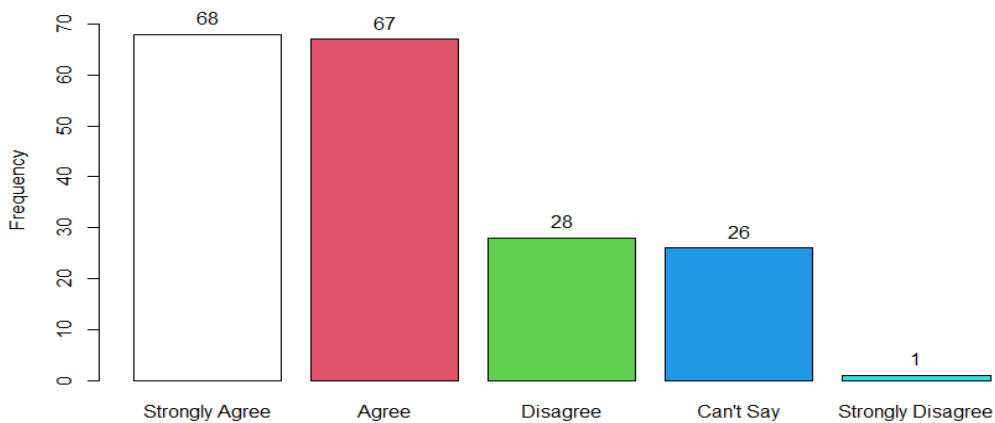


Figure 13: Education has improve by use of mobile phone

Figure 13 indicates that 68 students very much agree with the statement education has been improved by mobile phones, and 67 students agree with the statement education has been improved by mobile phones. 28 students do not agree with it and 26 students did not even comment on this. 1 person strongly disagreed with the statement.

Distribution of data\$My.mobile.phone.is.always.on.and.it.disturbs.the.class.with.its.rington

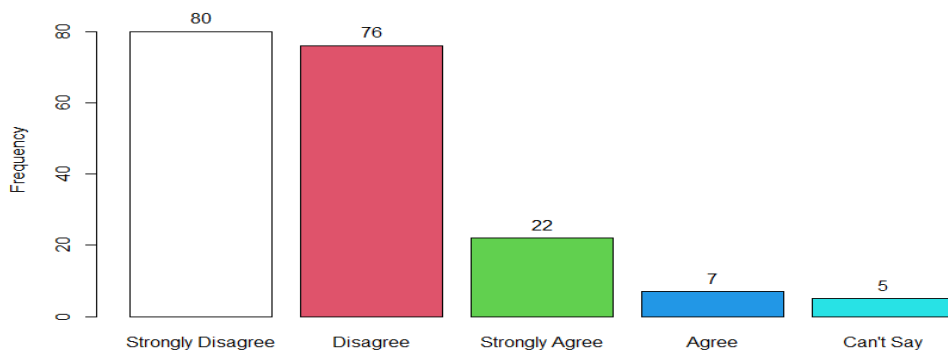


Figure 14: Effect of mobiles ringtones during class hours

Figure 14 indicates that 80 students strongly disagree that mobile phone ringtones cause issues while attending the session, 76 students disagree on the same line, and 22 students say mobile ringtones during the class distract the class's attention. 7 students agree with the same and 5 students don't want to give an opinion on the said topic.

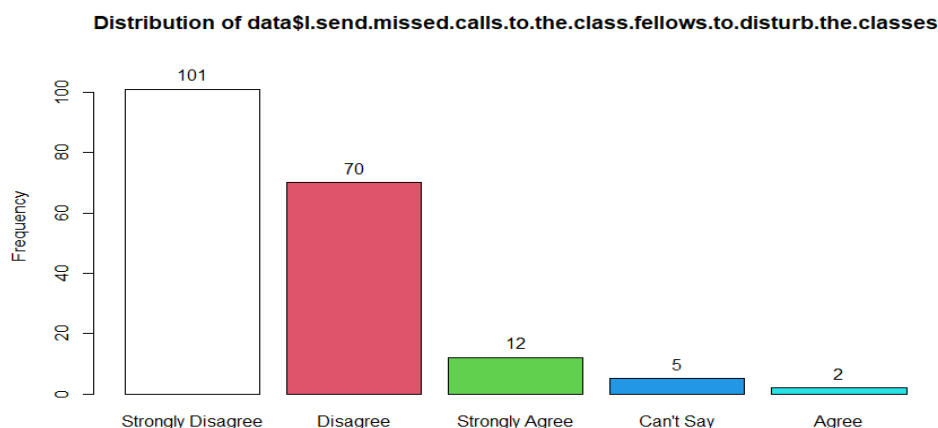


Figure 15: Miss class during lecture hours to distract the class

Figure 15 indicate that 101 student strongly disagree on the missed call creates problem during classes are going on whereas 70 students also thinks in same manner missed call not create any issues during class hours.12 students have different mind they feel that missed call creates problem with respect to concentration, 2 students also have similar opinion whereas 5 student don't want to share their views on this.

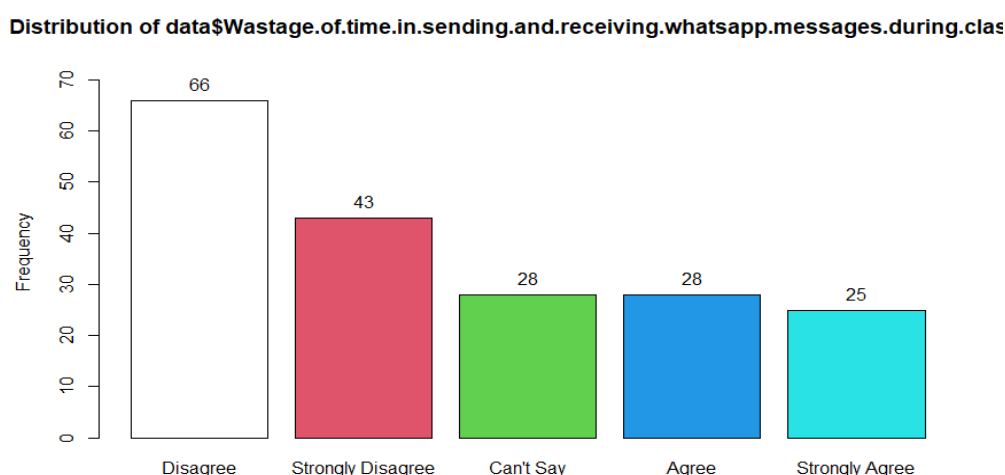


Figure 16: Sending and receiving WhatsApp messages during class.

Figure 16 indicates that 66 students disagree to use WhatsApp communication during class hours. 43 students strongly disagree with the usage of WhatsApp during lecture timing. 28 students feel like usage of technology is also equally important when we speak about WhatsApp as many students believe that WhatsApp is an educational tool .25 students strongly agree on this, whereas 28 say we can't say on the topic of usage of WhatsApp during class hours.

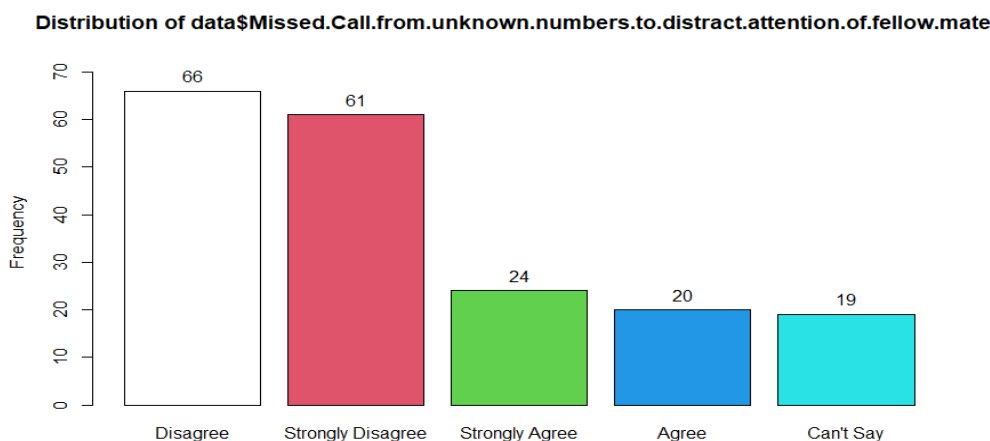


Figure 17: Missed call from unknown number during class to distract attention

Figure 17 indicates 61 students strongly disagree on miss calls from an unknown person during lecture hours create any impact .66 students also disagree on the same line they feel like no problem with calls during lecture hours .24 students think that missed calls from an unknown person during lecture hours create a problem and they can't concentrate on lecture later. 20 students also agree on the same line, whereas 19 students can't say on this.

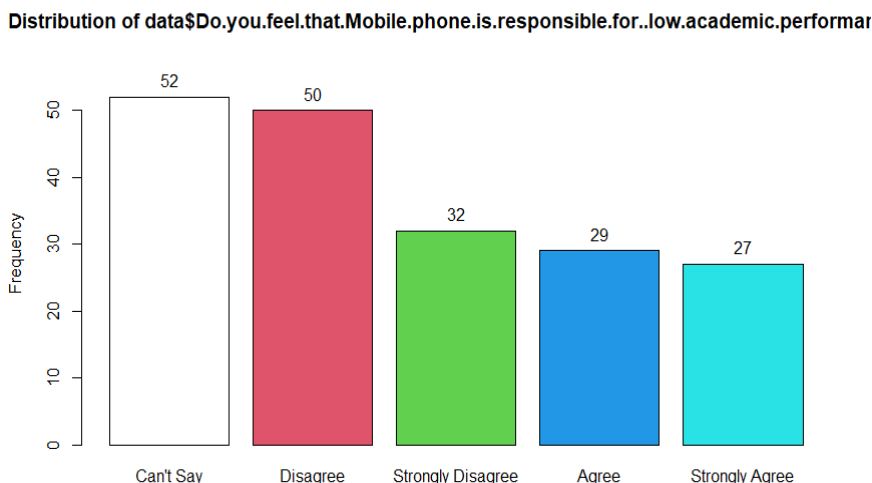


Figure 18: Mobile phones is responsible for low academic performance

Figure 18 indicates that 32 students strongly disagree on the usage of mobile phones to low academic grades,50 students disagree on the usage of mobile phones impacting low academic grades.29 students agree with the statement they feel that the usage of mobile phones impacts academic performance. 27 students strongly agree on the point that mobile phones are very much problematic when compared with academic performance, Whereas 52 students can't comment on the usage of mobile phones.

Distribution of data\$Usage.of.Mobile.Phones.during.examination.hall.to.deal.with.Unfair.Mea

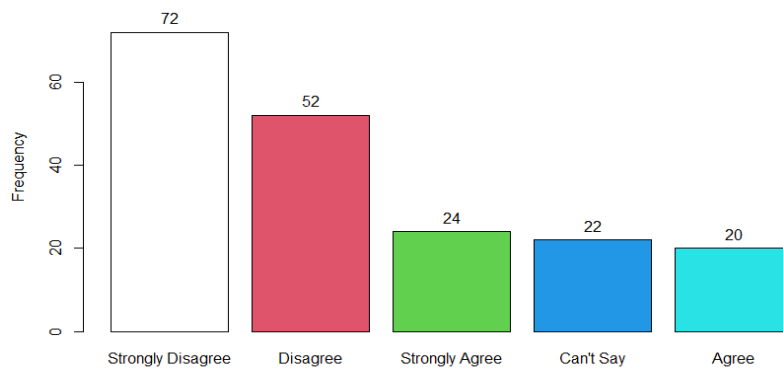


Figure 19: Usage of mobile phones during exam hall to deal with unfair means

Figure 19 indicates that 72 students strongly disagree online that usage of mobile phones at examination halls deals with unfair means. 52 students disagree on the same grounds that mobile phones can be used in examination halls 22 students don't want to comment on that whereas 24 strongly agree and 20 also agree on the statement stating mobile phones can be used to deal with unfair means in college.

Distribution of data\$Do.you.feel.that.Usage.of.mobile.phone.is.waste.of.time.academically

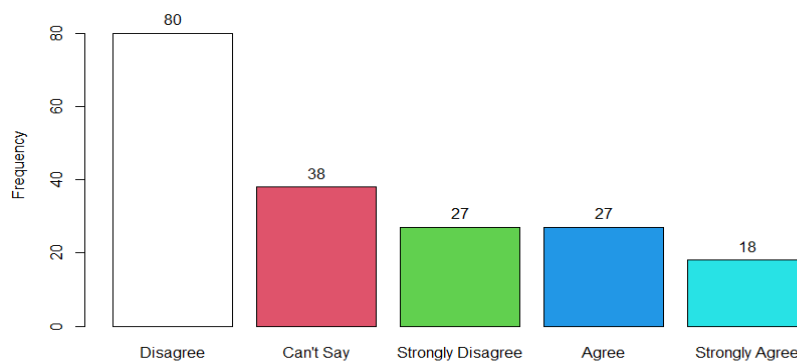


Figure 20: Usage of mobile phone is waste of time academically

Figure 20 indicates that 80 students disagreeing on the usage of mobiles creates a lot of problems with respect to time. 27 students strongly disagree on the line that due to mobile phones we have faced lots of wastage in time. 27 students believe that due to mobile phones many problems occur as its use and wastage of time is the result of it .38 students don't want to give any comment on usage of mobile phones.

Distribution of data\$Mobile.phone.has.adverse.affect.on.students.moral.value

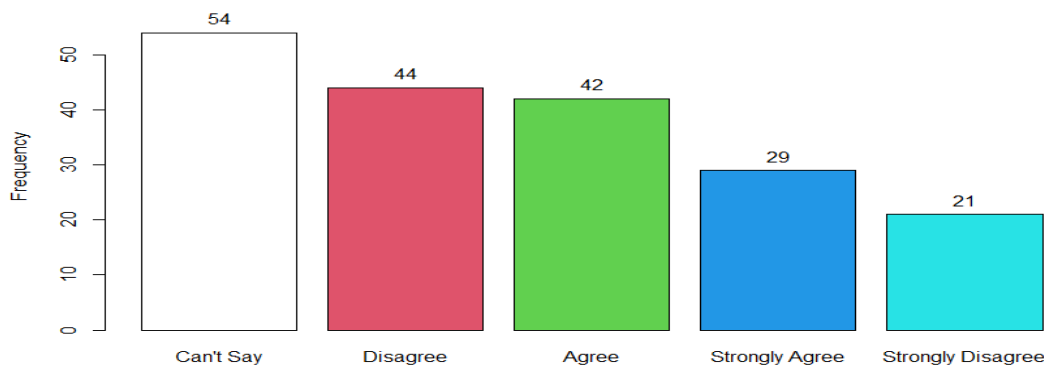


Figure 21: Mobile phone has adverse effect on student's moral value

Figure 21 indicate that 44 students are disagree on the statement where mobile phone has adverse effect on student moral values.21 students strongly disagree on mobiles phone causes adverse effect on students moral

values.42 students agree for mobile phone may cause adverse effect on students moral values and 29 students are strongly agree on mobile phones has adverse effect on students moral values.42 says agree for the mobile phones has adverse effect on students moral value whereas 54 students can't say anything on the statement.

Distribution of data\$Usage.of.Internet

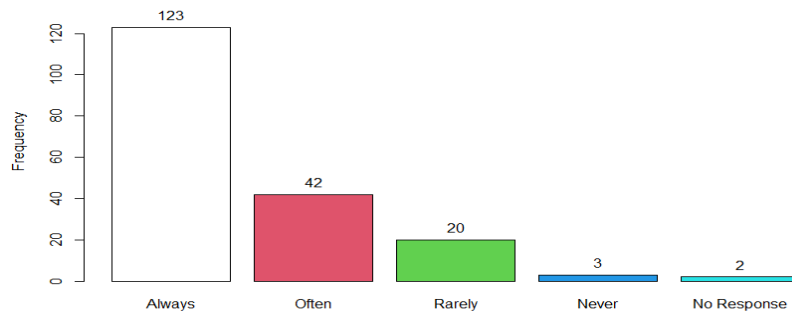


Figure 22 Usage of Internet

Fig 22 indicates that 123 students always use the internet , 42 students often use the internet,20 students rarely use the internet and 3 students do not use the internet whereas 2 students do not give any response.

Distribution of data\$Usage.of.Social.media

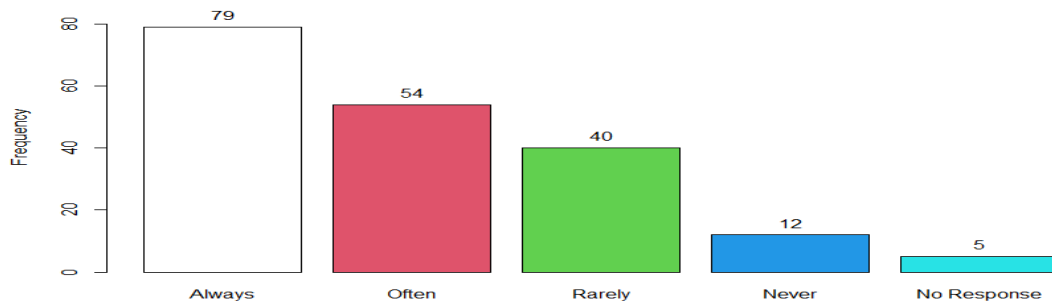


Figure 23: Usage of Social Media

Figure 23 indicates that 79 students use social media always , 54 students use it often , 40 students use social media rarely, 12 students uses social media never whereas 5 students have no response.

Distribution of data\$Other.activities.like.Games

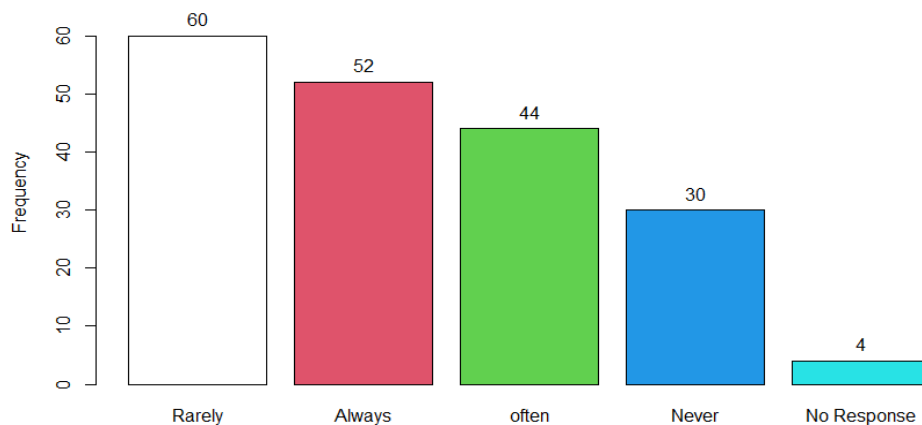


Figure 24: Other activities like games

Figure 24 indicates 52 students always play games and other related activities on mobile.44 often use mobiles phones for using games and other activities.30 students never used mobiles phones for playing games and other activities, whereas 4 students did not respond.

Testing of Hypothesis

Hypothesis H0:-Students' performance was affected by their use of mobile phones

- Q1) How much time do you spend on your mobile phone?
- Q2) How often do you check your mobile phone?
- Q3) In a day, how much time do you spend on mobile
- Q4) What is your opinion about the continuous use of mobile distracting your attention from studies?
- Q5) Checking of mobile phones on a daily basis
- Q6) Approximately how often does using a mobile phone in class affect your learning?
- Q7) Have you noticed any recent calls or messages received prior to class having an impact on your performance?
- Q8) During study time, how often do you use your mobile phone?
- Q9) My mobile phone is always on and it disturbs the class with its ringtone
- Q10) I send missed calls to the class fellows to disturb the classes
- Q11) Wastage of time in sending and receiving WhatsApp messages during classes
- Q12) Missed Call from unknown numbers to distract the attention of fellow-mates
- Q13) Usage of social media
- Q14) Other activities like Games

H1:-Mobile phones are important gadgets in our current technological age, so they are helpful for academic purposes

- Q1) Do you have an account on social media?
- Q2) Do you have a smartPhone?
- Q3) In what ways are mobile phones used in class to assist students with their learning?
- Q4) I am able to contact the teachers easily in order to study
- Q5) It is easy for me to contact classmates for help with my studies
- Q6) As a result of mobile technology, my academic performance has improved
- Q7) Education has been improved by the use of mobile phones

Discussion

Inferential statistics (T-test, linear regression analysis, independent sample-test, and one-way ANOVA) were used to analyse and interpret the data by R Programming.

T-Test

One Sample t-test

data: data\$How.much.time.do.you.spend.on.your.mobile.phone.

t = -478.85, df = 189, p-value < 2.2e-16

alternative hypothesis: true mean is not equal to 38

95 percent confidence interval:

3.305031 3.589706

sample estimates:

mean of x

3.447368

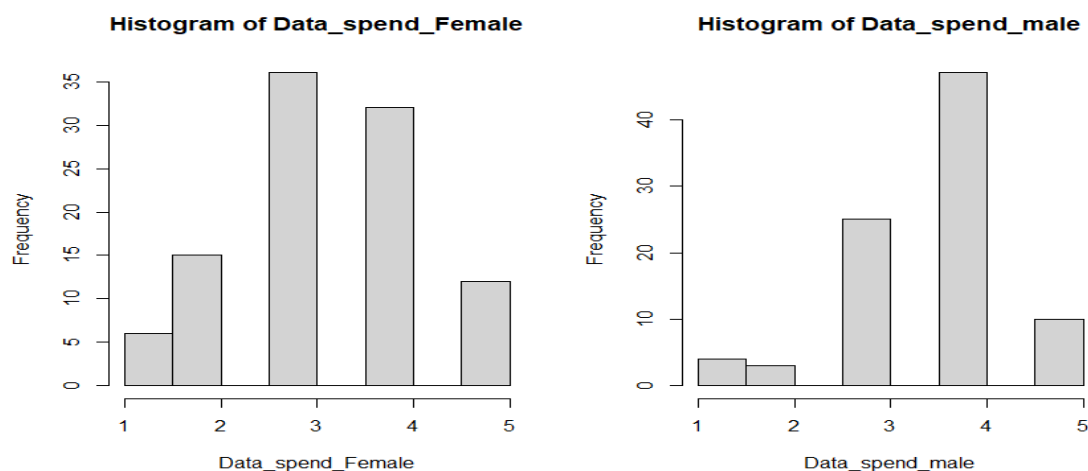


Figure 25: Data spend Female /Male

Histogram shows usage of male and female students on usage of mobile phones. (1 is less and 5 is max)

Interpretation

Alternative hypothesis is working in this criteria , as in this technological world usage of mobile phones for learning concepts are essential.

Chi-square Method

```
data1<-data.frame(data$How.much.time.do.you.spend.on.your.mobile.phone.,data$Gender)
data1=table(data$How.much.time.do.you.spend.on.your.mobile.phone.,data$Gender)
```

```
print(data1)
```

```
print (chisq.test(data1,simulate.p.value = TRUE))
```

```
Female Male
```

```
1 6 4
```

```
2 15 3
```

```
3 36 25
```

```
4 32 47
```

```
5 12 10
```

```
> print(chisq.test(data1,simulate.p.value = TRUE))
```

```
Pearson's Chi-squared test with simulated p-value
```

```
data: data1
```

```
X-squared = 12.706, df = NA, p-value = 0.009995
```

Interpretation :-As per Chi Square test, since we get a p-Value less than the significance level of 0.05, we reject the null hypothesis and conclude that the usage of mobile phone is essential for education purpose .

Suggestions

- Using a cell phone can be a valuable learning tool for students since they will be able to learn a new form of technology as well as explore the Internet.
- Students can easily obtain answers to questions by accessing the Internet through their cell phones.
- There should be a limit on mobile phone usage. The overuse of mobile phones can also result in eye sight problems, headaches, and other problems.
- Teachers should set clear expectations for what happens if smartphones are misused in the classroom. When it comes to learning in new ways, too much of anything can be a bad thing, but just enough can be invaluable

Conclusion

The use of cell phones has become an integral part of our daily lives. Mobile phones are useful for learning new things through the internet and are capable of upgrading students through the use of technology. While cell phones can be convenient and helpful tools for study, depending on a student's attitude and use pattern, they can also be harmful distractions.

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