ACADEMIC USE OF SMARTPHONE: A COMPARATIVE STUDY OF PUBLIC AND PRIVATECOLLEGES AT RAWALPINDI

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2024

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A thesis submitted in partial fulfilment of the requirement for the degree of

MS in Education

Department of Educational Leadership and Management
Faculty of Education
INTERNATIONAL ISLAMIC UNIVERSITY, ISLAMABAD
2024

Dedicated

To

My Parents and my Respected Teachers

SUPERVISOR'S CERTIFICATE

The thesis titled "Academic Use of Smartphone: A Comparative Study of Public and Private Colleges at Rawalpindi" submitted by Mr. Asif Iqbal Reg. No. 404-FSS/MSEDU/S21 in partial fulfilment of MS degree in Education, has been completed under my guidance and supervision. I am satisfied with the quality of student's research work and allow him to submit this for further process as per IIUI rules and regulation.

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ACADEMIC USE OF SMARTPHONE: A COMPARATIVE STUDY OF PUBLIC AND PRIVATE COLLEGES AT RAWALPINDI

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AUTHOR'S DECLARATION

I, Mr. Asif Iqbal Reg. No. 404-FSS/MSEDU/S21as a student of MS in Education at International Islamic University, Islamabad do hereby declare that the thesis entitled "Academic Use of Smartphone: A Comparative Study of Public and Private Colleges at Rawalpindi", submitted for the partial fulfilment of MS in Education is my original work, except where otherwise acknowledged in the text and has not been submitted or published earlier and shall not in future, be submitted by researcher for obtaining any degree from this or any other university or institutions.

_____

Asif Iqbal

ACKNOWLEDGEMENTS

In the name of Allah, the most beneficent, the most merciful

Researcher is grateful to his Supervisor Dr. Azhar Mehmood, Chairman Department of Educational Leadership and Management, Faculty of Education, International Islamic University, Islamabad, whose sympathetic guidance has been a source of inspiration throughout the laborious process of the research.

Researcher feels proud to express his deepest sense of gratitude and appreciation to Researcher is also thankful to Dr. Muhammad Munir Kayani, Dr. Sheikh Tariq, Dr. Zafar Iqbal and Dr. Sufi Amin for the completion of this research.

Researcher is indebted to his respectable parents and family members, due to their passionate help in all aspects made this study possible. Researcher is thankful to all his friends for their encouraging behaviour during the course of this study.

Asif Iqbal

Abstract

The purpose of this study was to find out the effectiveness of smartphone in public and private colleges in Rawalpindi. The study was based on the following objectives: To find out the students' perceived ease of use of a smartphone in learning activities in private and public colleges, to find out the effectiveness of smartphones on the students' academic achievement in private and public colleges and to find out the effectiveness of smartphones to enhancement of knowledge and information of students in private and public colleges. It was quantitative research in nature and survey design was used to conduct the research. The population of the study was comprised of male students of Sir Syed College and Punjab group of colleges (Satellite Town College). Total number of colleges at Rawalpindi are Public 09 and Private 46. So 2nd year pre engineering students was selected as a population. The sample of the study was comprised of 227 students of public and private colleges at Rawalpindi. One hundred students having maximum marks in 1st year from each college was selected. The questionnaire was including information regarding effectiveness and improvement after and before use of smartphone, questionnaire was based on five rating scale (5- strongly agree to strongly disagree. A well-structured questionnaire was prepared and distributed to the college students of private and public colleges of Rawalpindi for the purpose of data collection. It was quantitative research in nature. Data were analyses by using SPSS Software and Mean, was applied. Proper permission was acquired from concerned. The privacy of research participants was ensured. It is concluded that majority agreed with the statement that I can attach/send digital document to teachers with no difficulty, I can efficiently use Zoom or Similar Applications for Online lectures by using smartphone, I can use online Dictionary for improvement of my English Language on Smartphone, I have good experience of online class than face to face class, I can upload notes, videos in the portal for the purpose, I can use WhatsApp for group discussion between students for online teacher-student interaction, I can utilize all the Smartphone information easily, I am aware of academic use of smartphone while majority disagreed with the statement that I can use Google Meet to create a meeting and share its link. It is recommended that regularly evaluate the effectiveness of implemented policies or interventions and modify strategies as needed and suggest strategies for educators to effectively integrate smartphones into teaching methodologies.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Smartphones are equipped with multimedia phone features, which include camera function, sound recording function, video function and many others. These features assist students to drive their learning process and dreams effectively. According to Kibona and Mgaya (2015), most smartphone- and recreational applications are addictive to both the higher level and lower level students in Tanzania, which, in turn, affects their academic performance. The applications mentioned included WhatsApp, Twitter and Facebook. Furthermore, some learning systems have emerged over the years and involve ubiquitous learning (u-learning), which is being powered by smartphone capabilities in the learning environment. According to Jung (2014), ubiquitous learning (u-learning) combines the characteristics of electronic learning (e-learning) and mobile learning (m-learning), in driving forward different forms of learning through the internet connection process in the 21st century.

In recent days, digital technology changes so rapidly and integrates into our society, it is hard to keep up with it, let alone reflect on the effectiveness has on our lives. The Internet is very useful for a variety of purposes, such as convenient electronic commerce, rapid sharing of information, contact with other cultures, emotional support and entertainment as stated by Kraut et al 2019. A smartphone combines the services of the Internet and a mobile phone. Smartphones offer qualitatively different services in addition to the benefits that the Internet offers "(Scherer, 2020).

The emergence of Information and Communication Technology and internet facilities have drastically affected almost every aspect of human life. Currently, it is greatly evident in the way of teaching and learning. Nowadays, smartphones have become a part of every person's life. Globally, "People around the world have adopted this new and exciting technology as one of the most important required facilities in their everyday life "Fawareh et al, (2017). Globally, the explosion of smartphones and its related devices has greatly transformed teaching and learning in developed nations where developing nations are not the exception as explained by "Tagoe et al, (2019).

The proliferation of these facilities has changed the style of learning whereby students or learners no more solely depend on paper-based materials. The introduction of the internet led to the emergence of smartphones which enables learning to take place irrespective of the geographical location or period of time Martin (2018).

Currently, the use of smartphones performs phenomenal roles as far as teaching and learning are concerned. For instance, students can access their lecture materials on their smartphones, quickly access information online to meet their information needs via learning management systems, access academic databases, and a website to mention but a few. This was evident in the works of "Masiu et al, (2018) where it was stated that "The smartphone has also made students 'lives easier, as they can access their school information on the gadget through electronic learning and mobile learning." The development of smartphone keeps on evolving as human lives keep evolving. Due to the varying needs, demand, and taste of smartphone users, the new version comes frequently with additional features "(Alfawareh & Jusoh, 2019).

The use of smartphones in learning has become the latest trend in higher education where an individual may not necessarily need a computer set to access

electronic learning materials. The phenomenal roles of the smartphone in learning have been revealed by numerous authors such as in t (Goldberg, 2017) he works of Valk, Rashid, and Elder (2018) that, smartphones have made learning more flexible, easy and have helped to reduce the ultimate inherent conventional classroom learning. For instance, a smartphone makes it possible for students to access educational materials at anytime, anywhere and it is highly cost-effective since this opportunity is just a function of smartphones. Kumar also brought to bear that smartphone users are able to download recorded online lectures, and electronic books to enhance learning. "Young (2020).

The purpose of the study is to check the academic use of smartphone in public and private colleges of Pakistan and its effectiveness on learning activities to bring out strategies on how students can enhance their learning activities with the use of smartphones "Shaffer (2021).

1.2 Problem Statement

In the literature, many researchers have focused on the academic use of smartphone on daily life however; empirical work for the developing countries still limited. No in-depth empirical study has been carried out so far to examine the academic use of the smartphone on students' performance in private and public colleges in Rawalpindi.

1.3 Objectives of the Study

The study was based on the following objectives:

1. To find out the students' perceived ease of use of a smartphone in learning activitiesin private and public colleges.
2. To find out the effectiveness of smartphones on the students' academic achievementin private and public colleges.

3. To find out the effectiveness of smartphones to enhancement of knowledge andinformation of students in private and public colleges.

1.4 Research Questions

Following research questions were formulated to study the phenomena:

1. What are the eases of use of a smartphone in learning activities in private and publiccolleges?
2. What are the effectiveness of smartphones on the students' academic achievementin private and public colleges?
3. What are the effective nesses of smartphones to enhancement of knowledge andinformation of students in private and public colleges?

1.5 The significance of the Study

The present era is of information technology and usage of smartphone. The study traversed upon analyzing the academic use of smartphone. It may beneficial for the student. Thisresearch work may also provide a significant contribution to the students in enhancing the knowledge and information. The second contribution of my study may examine the academic use of smartphone on the academic achievement in private and public colleges' students.

1.6 Delimitation of the Study

The study was delimited to:

1 Male students

2 2nd year Pre engineering

3 Smartphone

1.7 Methodology of the Study

1.7.1 Research Design

It was quantitative research in nature and survey design was used to conduct the research.

1.7.2 Population

The population of the study was comprised of male students of Sir Syed College and Punjab group of colleges (Satellite Town College). Total number of colleges at Rawalpindi are Public 09 and Private 46. So 2nd year pre engineering students were selected as a population. The sample of the study was comprised of 227 students of public and private colleges at Rawalpindi. One hundred students having maximum marks in 1st year from each college was selected.

1.7.3 Instrument Questionnaire

For this study a questionnaire was prepared and data were collected through three point Likert Scale. Questionnaires was prepared after a thorough study of the literature.

1.7.4 Validity and Reliability

Validity simply means that a test or instrument is accurately measuring what it is supposed to measure. In this study, questionnaire was used to collect the data that is and its validity was determined through pilot testing and expert opinion. Reliability can be defined as the degree to which measurements are free from error and therefore give consistent results. In other words, reliability concerns the extent to which a test or any measuring procedure yields the same results on repeated trials. Reliability of instrument used in this study was determined through test-retest method.

1.7.5 Procedure (Data Collection)

In this study, data were collected by using close ended questionnaire. The researcher approaches every respondent and distribute the questionnaires among the selected samples. Before giving the questionnaire the purpose of the study was described and instructions were given about how to fill up the questionnaire. A well-structured questionnaire was prepared and distributed to the college students of private and public colleges of Rawalpindi for the purpose of data collection.

1.7.6 Data Analysis

It was a quantitative study. Data were analyses by using SPSS (Version,24) Software and Percentages, frequencies, Mean and standard deviation was used. The result of the analyzed data were present in the form of tables.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This section takes into account the past theoretical and empirical work and provides a quick review of the existing literature which is relevant to this study. We begin with the empirical literature, which examined the effectiveness of smartphone on daily life. Further, we document those studies which examined the effectiveness of smartphone on student's life. Smartphone addiction is considered to be rooted in Internet addiction due to the similarity of the symptoms and negative effectiveness on users. Internet addiction is defined as an impulse control disorder, characterized by pathological Internet use "Goldberg, (2017). Smartphone addiction could be categorized as a behavioral addiction, such as Internet addiction. Behavioral and chemical addictions have seven core symptoms in common, thatis, salience, tolerance, mood modification, conflict, withdrawal, problems, and relapse. These common points are not integrally researched, but each symptom has been found in smartphone addiction studies "Hegner SM, (2020).

"Lin et al, (2017) reported four features of smartphone addiction, that is, compulsion, functional impairment, tolerance, and withdrawal. Bianchi and Phillips suggested that smartphone overuse associated with psychological symptoms constitutes a form of behavioral addiction. Smartphone addiction is also considered a technological addiction that involves human–machine interaction. The use of a smartphone not only produces pleasure and reduces feelings of pain and stress but also leads to failure to control the extent of use despite significant harmful consequences in financial, physical, psychological, and social aspects of life "Van Deursen et a, (2018). Addiction to media has been characterized as excessive or

poorly controlled preoccupations, and compulsive needs or behaviors that lead to impairment “Demirci et al, (2019).

A study reported that media addicts could not manage real-life activities (Greenfield, Young). The people using the Internet longer had poor social support and higher levels of loneliness (Nie and Erbring). Children using the cell phone displayed more behavioral problems such as nervousness, temperament, mental distraction, and indolence, and these problems worsened if the children began using a cell phone at an early age “Divan et al, (2018). Awareness regarding the severity of smartphone addiction has already been reflected in clinical science and praxis. The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) introduced the diagnostic criteria for Internet gaming disorder and encouraged further research for listing it as a formal diagnosis “Alijomaa et al, (2019).

Oulasvirta et al reported that the awareness of problems with repeated use of smartphones was underestimated, and only a few reported that they were aware of it. The few respondents reported repeated usage of a smartphone as annoying, addicting, “a trap,” and distracting. They were aware that repeated use could lead to addiction; however, they were not aware of the severity of the repeated and intense use of a smartphone. If one is awareof the risks posed by smartphone addiction, one would do something against it. The areness of the severity of smartphone addiction can, therefore, play a role in preventing it. Life satisfaction pertains to the normal evaluation of one’s surroundings, and subjective happiness or personal contentment (Scheufele and Shah, (2017). Addiction to media couldincrease depressive symptoms and substance use, and it could decrease well-being “Ha and Hwang, (2018). Showed that smartphone addiction is not directly linked to life satisfaction, but it is linked via perceived stress and academic performance.

Gender, specifically, being male, is a risk factor for pathological Internet use (Frangos et al.). Results from multivariate logistic regression analyses have suggested 50 percent increased odds for males to be addicted to the Internet (odds ratio (OR) = 1.5, 95% confidence interval (CI) = 1.1, 2.2) as compared with females. Women use the Internet mostly for social purposes and males do so for downloading programs, getting information, and for visiting pornographic sites (Tsitsika et al,Ybarra and Mitchell). In contrast to Internet addiction, studies on smartphone addiction reported that females were more dependent on smartphones than males were (Billieux et al., 2018).

Smartphone addicts spend considerable time using their smartphone. The daily use duration of a smartphone is one of the most significant indicators of smartphone addiction. Torrecillas reported that 40 percent of adolescents and adults use smartphones for more than 4 hours a day to make calls and send messages. In addition, such people showed more problems in psychosocial, health, and technological dimensions, and they exhibited more preoccupation with smartphones and smartphone overuse as compared with those who used a smartphone for less than 4 hours per day "Alijomaa et al, (2019).

2.2 Role of Smartphones in Education

The role of smartphone and mobile technologies in education must not be ignored (Tikoria & Agariya, 2017). Academic learning is now innovative as a result of smartphone and other media in promoting and advancing 21st century needed skills and knowledge (Tulenko & Bailey, 2013; Emerson & Berge, 2018). Students have experiences of digital surroundings in a tactile and personal manner, which is brought about by some mobile devices, including tablets and smartphones (Cano, 2012). Mokoena (2012) argues that the use of smartphones by students improves

collaborative learning through its connection to the internet. This statement implies that the use of smartphones drives students to be more engaged in learner-centred participation learning. This is a vivid indication on numerous supports that smartphones have brought to the students; it advances their understanding by increasing academic performance, social media participation and information sharing; it helps their social skills by giving them opportunities to seek academic assistance and support, and many more (Mokoena, 2012).

However, according to Kinsella (2009), the challenge of communication in lecture halls with students is solved due to the use of smartphones. Concomitantly, Mokoena (2012) states that group projects and/or work given to the students by their lecturers are easily and conveniently carried out with the aid of smartphones. This further shows that students are now able to record their lecturers' lessons and teachings in real time. This is done by recording information during lessons, which has been made possible by the sophisticated features available on smartphones. From different perspectives, people try to embrace the use of smartphones because it is no longer used as communication tools (calls and text messages) only, but also as tools for people's social and work lives and possibly a potential instrument in their academic lives (Cano, 2012).

According to Buck, Melnnis, and Randolph (2013), Lytle (2012) reports that college students using the StudyBlue Flash Cards believed it assists them in memorising the key terminologies when preparing for their tests. The study further states that some students use iPhones for the Evernote Peek application, which serves as a note-taking cloud service, thereby giving them the opportunity to sort out their notes and transforming them into effective study materials. With the evolution of smartphones, what the students do outside the classroom is very much the same as the

work they do inside of the classroom. This observation is very important to the issue brought up in the study with regard to the responsibility or role of smartphones outside the premises of the school (university). It can be observed that students use their smartphones for various reasons at university without restrictions. Then, according to Vanwelsenaers (2012), students spend a considerable percentage of the 4.5 lesson hours using smartphones. Currently, collaboration is a key 21st century skill that Singapore's teachers are trying to help their students learn. In addition, through the effective use of smartphones, students are engaged in dialogues and other collaborative activities, and this is an excellent illustration of how the smartphone facilitates conversation and information/content sharing (Buck et al., 2013; Vanwelsenaers, 2012).

2.3 Portability of Smartphones as a Convenient means of Learning for Students

Students happen to be interested in ways they can learn and at the same time have their attention captivated. They may be provided with autonomy over their educational experience (Buck et al., 2013) and access to standard learning contents and opportunities (Day & Erturk, 2017). As a matter of fact, one of the most important features of the everevolving features of the smartphone is its small or rather portable size and its ability to be used not only in the classroom, but also outside the classroom (Mokoena, 2012). This offers an edge over the traditional platform for learning and teaching, which deals with books and chalk/marker boards behind the four walls of education institutions. It was suggested by Ezemenaka (2013) that the use of internet-enabled phones has been on the rise in the 21st century, and as a matter of fact is something that many cannot comprehend. Additionally, young people pay a great deal of attention to their internet enabled phones, also to what their peers think of them.

As the mental effects of the use of smartphones are ever present in the lives of the users, there also exist other impacts caused by the continuous use of smartphones, and this has been identified to be an ‘addiction’. Some psychologists, of recent, have issued cautions that cell phone users face the risk of being addicted to their phones. There are some medical concerns that have been raised in association with the use of smartphones; there also happens to be effects such as insomnia, anxiety, misery and others (Ezemenaka, 2013). All these effects usually develop when students find themselves without their cell phones.

Ebiye (2015) listed the rudimentary utilities of smartphones, which comprise mobile teleconferencing, mobile audio and visual calls, as well as sending and receiving electronic mails. Then, according to Gowthami and VenkataKrishna-Kumar (2016), they argue that the use of the internet is now a routine habit for students, as well as a medium that is used by students to search for information at anytime and anywhere. Based on all indications, the rate of smartphone penetration aids teaching and learning processes among students in developing societies through the use of internet connections. Smartphones and mobile technologies make access, exchange and mobility of information easier (Kent, 2016).

2.4 Challenges involved in using Smartphones and the Effects Accompanied with the Use

It appears that some students are able to accomplish tasks using smartphones at universities or classrooms, while in the case of others, the smartphone has become a potential form of distraction. Even the visibility and mere presence of a smartphone that is connected to the internet attract the attention of students and many adults, thereby diverting their focus and/or attention in class. Some students can ‘switch’ their focus between the smartphone as a form of entertainment device and at the same

time, a learning platform (Barnwell, 2016). Additionally, smartphones could prove to be very important in the sense that it gives children, or in this case, students from different kinds of socioeconomic backgrounds, the same opportunity to access learning materials (digital-age information). However, the use of smartphones as a form of learning entails that students have to combine information and at the same time stay focused on their lesson or discussions in class. For students, who have low literacy skills and the steady urge to multitask on social media, blending the purposeful use of smartphones into classroom activity can be particularly challenging. Then, the main advantage of the tool tends to go to waste. There has been proportional growth in the use of mobile phones, and mobile phones are being overused (Baron, 2010).

Smartphone encourages micro-learning for the employed and unemployed for advancement of knowledge and skills (Emerson & Berge, 2018). Young people's use of smartphones invites the initiation of social circles; friendships are also initiated and destroyed. Romantic affiliations emerge from these social circles, which are often developed or established on the social and recreational websites, thereby probably leading to a shift in the relationship of users with their family members.

Traditionally, friendships and social associations or connections were done in person; however, in the era of the evolving technological world of smartphones, they are being done over social networks and as a matter of fact have become the preferred platform to develop friendships. Friendships that are developed over social networks tend to be more recreational and are less based on educational purposes. Based on the previous sentence, it is a clear indication that less attention is given by the students to their academic work and activities. Some schools have decided to restrict the use of

smartphones in classes or during lectures; the reason being that it enables the students to cheat during their examinations and/or tests (Buck et al., 2013).

The easy internet access on smartphones enables students to easily look up their examination and/or tests questions online. The use of smartphones in this manner can cause the student to be somewhat relaxed about studying, as they can easily find the answers to their examinations or test questions online, thereby helping the students to pass their examination, but not helping them to have knowledge about what they are being taught by their lecturers. Consequently, the adoption of smartphones can be said to be driven by two properties of decadent and sensible dimensions.

In essence, it is no longer only a task-oriented technology for the purpose of productivity, but it is also an entertainment-oriented technology that is designed for pleasure. According to Chun, Lee, and Kim (2012), 18 to 20 persons tend to become thoroughly driven sentimentally in probing for fun and sensory stimulation when using a smartphone for entertainment purposes and pleasure, while they are likely to be judiciously persuaded to scrutinise cost benefits based on its performance when using smartphones for work (Chun et al., 2012).

2.5 Students' Perceived Ease of Use of Smartphones in Learning Activities

"Perceived ease of use (perceived complexity) has been found to be an important determinant of technology usage, both in a direct and indirect manner, and technology users have been proven to attempt to minimize their cognitive effort on their behaviors" (Cho, 2011). The author further concluded that individually students develop the intention to use smartphones in their learning activity, if it is perceived to be easy to use. Ifeanyi and Chukwuere (2018) revealed that most of the respondents 269 (71.7%) concur that, they sometimes find it a daunting task accessing academic

material on their smartphones. Consequently, it affects their academic performance. This finding support the study of Sarfoah (2017) in which it was revealed that, most respondents strongly disagree to the statement that "I find smartphone learning easy." This is an indication that, the students did not find it comfortable using a smartphone as a supplement tool for learning.

On the other hand, Iqbal and Bhatti (2015) investigated University students' readiness towards Mlearning using Technology Acceptance Model in Pakistan and it was brought to bear that, students possess the right skills to use mobile learning; they will find it easy to use a smartphone; and this also enhances their perceived usefulness of using smartphone for learning activities.

2.6 Perceived Usefulness of Smartphone in Students' Academic Achievement

In a study conducted by Jung (2014) on determinants impacting learners' satisfaction and performance with smartphones in North-West University (NWU) in South Africa, it was revealed that one of the usefulness of smartphones is the ability to enable users to study anywhere and at any time, making learning more attractive. Ifeanyi and Chukwuere (2018) investigated the impact of using smartphones on the academic performance of undergraduate students in South Africa using a quantitative methodology with 375 sample size and data was collected using a questionnaire. The study revealed that smartphones help students to communicate with their classmates as well as their courses masters/ tutors. Also, students use smartphones to explain the facts, illustrations, and concepts with colleagues. In the same study, it was brought to bear that, smartphones support students' learning activities in myriads of ways such as downloading of study materials, recording of live lectures, accessing lecture slides at a convenient time, aiding in research work and doing assignments.

In the same vein, Almansour and Alzougool (2017) undertook a study on "the use of smartphone for learning activities by university students in Kuwait", the study recorded that, the use of smartphones performs prodigious roles in students learning activities. For instance, students use smartphones for registering courses, checking lecture time table and exams schedule, checking grades, having group discussion, reading announcements and for the payment of school fees and many more. Similarly, the usage of smartphones among Malaysian students was reported in the works of Mohtar Hassan, Hassan, and Osman (2013). The study revealed that university students in Malaysia had adopted smartphones as a necessity for learning at higher learning institutions. Students used smartphones for sharing notes between classmates, recording lectures, as well as helping to take pictures of assignments for future reference and sharing exam results on Facebook through their smartphones. In the same vein, Tunca (2016) undertook a study on smartphones as tools for distance education. The study found that smartphones were very useful to the students; it enables them to take lecture notes, surfing the internet and instant taking of concept for later use.

Further, Corbeil and Valdes-Corbeil (2007), investigated the topic "are you ready for mobile learning", the study found that, smartphones greatly enhance interaction between instructors/lecturers and students, thereby, paving way for instructor and students to learn whiles on the move as compared to the traditional face-to-face mode of teaching and learning. In the case of Ghana, Akaglo and Nimako-Kodu (2019) investigated the effects of the use of mobile phones on second cycle students in Ghana. The study brought to bear that the use of smartphone enhances learning activities; it helps students to conduct research at their own pace, they are able to retrieve relevant and up to date information for their assignments and

projects without necessarily visiting the library physically. Also, it enables students to read ahead of time before class to have a fair idea of lessons yet to be taught.

Also, Tuncay (2016) investigated smartphones as tools for distance education at the British University of Nicosia, the school delivered distance education course via Smartphones. The study found that the use of the smartphone has made course delivery via distance mode very effective. For instance, it provides the opportunity for students to save all their lecture materials on a portable smartphone device without carrying heavy weight laptops or books. And students can access their lecture materials on their phones whiles lecturers can also interact with their students digitally irrespective of the geographical location. On the contrary, while smartphones provide communicative needs, their extensive use may have collateral damages on the physical, psychological, social, and the educational well-being of students (Kang & Jung, 2014).

2.7 Effect of the use of a Smartphone in Students Learning Activities

Ifeanyi and Chukwuere (2018) postulated that the use of smartphone on students has both a negative and positive effect depending on how it is used. Further, the author emphasizes on the negative side of the coin where the smartphone has become a great distraction to studies. For instance, there is a high propensity that students who are glued to their smartphone check updates or notification almost every minute if not strictly controlled. Consequently, this diverts their focus from their studies and even at a lecture time when a lecturer is at the peak of teaching. The author concluded that the effect of smartphones on academic performance or the learning of students is mixed with challenges Kibona and Mgaya (2015) postulated that despite the phenomenal advantage of smartphone in learning it is considered as double edge sword where most of the applications such as WhatsApp, Facebook, and

games, affect students in Tanzania negatively in all level because of its addictive nature. Thusly, it inadvertently steals away students' time which affects their academic performance adversely.

In the same vein, Lee et al., (2015) investigated smartphone addiction in university students and its implication for learning among 210 Korean female university students (mean age=22 years). The study revealed high-risk addictions and consequently rated themselves low on 'self-regulated using smartphones'. Similarly, this study agrees with Ifeanyi and Chukwuere (2018) where smartphone consumes most of the user's time and in addition does not enhance their academic performance but rather decrease as they envisioned before getting them as indicated by the majority 270 (72.0%). This is also affirmed in the works of (Lin et al., 2014; Tossell et al., 2015). In further elucidation, high excessive use of smartphones leads to complications which include vascular permeability, neck pain, and musculoskeletal disorders and mouse brain damages.

On the contrary, Shai (2016) assessed the use of smartphone in the University General Physics Laboratory. Using 120 students with a survey approach, the study found favorable responses on the effect of smartphones on students learning activities. Respondents affirmed that smartphone had a positive effect on their studies, for instance, it "provides an effective background on the lab safety information, administrative requirements and general knowledge of physics lab equipment" (p.33 as cited in Sarfoah, 2018).

2.8 Theoretical Framework

The current study revolves around the idea comparison of the students' academic performance to use of Smartphone. The study theoretically links to Unified Theory of Acceptance and Use of Technology. Here in the context of the current

study the growth of an e-commerce sector, emerging digital technologies, such as big data, Artificial Intelligence, cloud computing and robotics, drive the implementation of new technologies in organisations (Verhoef et al., 2021).

The Smartphone have dramatically changed the way organizations conduct business. The application of the technologies in the workplace has redefined inter- and intra- organizational communication has streamlined business processes to ensure benefits, such as higher productivity, the wellbeing of employees and the satisfaction of consumers (Papagiannidis & Marikyan, 2020). To achieve such benefits, companies make massive spending on technologies. However, the use of smartphone and implementation does not guarantee successful deployment and often bring low returns (Davis, 1989; Venkatesh et al., 2003).

The results of market research suggest that the success rate of new technology adoption in organizations, whereby smartphone bring expected return on investment (i.e. improved performance), is below 30 percent. The number is less optimistic if consider the companies, who could improve performance, but could not sustain the improvements in the long-term (De la Boutetière, Montagner & Reich, 2018). Given the consequences of technology adoption on organizations' performance and a cost-revenue structure, thetechnology utilization-acceptance gap remains one of the major areas of research in the IS literature. Research community accelerated its interest towards technology acceptance in the private and organizational contexts almost three decades ago (Davis, 1989; Compeau & Higgins, 1995; Goodhue, 1995; Leonard-Barton & Deschamps, 1988).

By 2000, technology acceptance research had resulted in a substantial body of evidence on user behavior related to smartphone adoption (Hu et al., 1999). Numerous models/theories had been introduced to understand the acceptance of the

technology, which cumulatively explained 40% of the variance in technology 8 use intention (Davis, 1989; Davis, Bagozzi & Warshaw, 1989; Taylor & Todd, 1995; Venkatesh & Davis, 2000). The models had roots in different disciplines, which limited the applications of these theories to certain contexts. For example, the Theory of Planned Behavior and the Theory of Reasoned Action offer a psychological perspective on human behavior by examining the variables, such as perceived behavioral control, attitude and subjective norms (Ajzen, 2011).

The theories provide generic insights into individuals' attitudinal underpinnings, which make them applicable to a wide range of research contexts, not limited to information system management. In contrast, Diffusion of Innovation Theory focuses on innovation- specific factors that determine users' behavior when it comes to new technology adoption (Moore & Benbasat, 1991). In addition, the models had different perspectives, reflecting the type of variables in the model, such as subjective norm, motivational factors, attitudinal factors related to technology performance, social factors, experience and facilitating conditions (Venkatesh et al., 2003; Taylor & Todd, 1995; Ajzen, 2011; Thompson, Higgins & Howell, 1991; Davis, Bagozzi & Warshaw, 1992; Venkatesh & Speier, 1999). The selection of either of the models constrains research findings to particular scenarios and conditions. Therefore, a unified approach was needed to embrace variables reflecting different perspective and disciplines and increase the applications of the theory to different contexts (Venkatesh et al., 2003).

To provide a holistic understanding of technology acceptance, Venkatesh et al. (Venkateshet al., 2003) set the objective for developing a unified theory of technology acceptance by integrating key constructs predicting behavioral intention and use. To fulfil this objective, the seminal IS acceptance literature was reviewed to draw up

theoretical and contextual similarities and differences among technology acceptance theories originating from three research streams – i.e. social psychology, IS management and behavioral psychology (see (Venkatesh et al., 2003)). Given that the theories stem from different disciplines, they cast diverse perspectives on technology acceptance and adoption. The socio-psychological perspective on research on individual behavior was represented by the Theory of Reasoned Action (TRA), the Theory of Planned Behaviour (TPB) and Social Cognitive Theory (SCT). Based on TRA and TPB, individuals' behavior is measured by the effectiveness of attitude toward behavior, subjective norm and perceived behavioral control on behavioral intention (Ajzen, 2011). The theories are used in IS management to explore the role of a perceived difficulty in performing the task, the effectiveness of group norms and attitude on accepting technology (Karahanna, Straub & Chervany, 1999; Zhang & Mao, 2020). TRA contributed greatly to IS acceptance theories, by providing 9 a theoretical framework that explained human behavior (Ajzen, 2011; Davis, 1989). SCT is based on the assumption that behavioral, cognitive and environmental factors (i.e. outcome expectations-performance, outcome expectations-personal, self-efficacy, affect and anxiety) have an interactive effectiveness on individuals' behaviour (Bandura, 2001). The theory has been used to investigate human-computer interaction (Compeau & Higgins, 1995; Compeau, Higgins & Huff, 1999).

The acceptance of smartphone from the vantage point of IS management was largely explained by Technology Acceptance Model (TAM), combined TAM and TPB model (C- TAM-TPB), Innovation Diffusion Theory (IDT) and the model of PC utilisation (MPCU). While TAM and C-TAM-TPB stress the importance of cognitive response to IS features in predicting behaviour (Venkatesh et al., 2003; Taylor & Todd, 1995), IDT focuses on system characteristics and properties in determining the

adoption of innovation (e.g. relative advantage, complexity, compatibility, image) (Moore & Benbasat, 1991). MPCU has very narrow implications, as the model encompasses the factors underpinning the utilization of personal computers (i.e. job fit, complexity, long-term consequences, affect towards use, facilitating conditions and social factors) (Thompson, Higgins & Howell, 1991), unlike other theories examining IS and innovation adoption (Venkatesh et al., 2003; Taylor & Todd, 1995; Moore & Benbasat, 1991). The behavioural psychology perspective on smartphone acceptance was represented by the Motivational Model (MM), suggesting that smartphone adoption and use behavior can be explored through user motivations (Davis, Bagozzi & Warshaw, 1992; Venkatesh & Speier, 1999). Users tend toevaluate the likelihood of engaging in behaviour by the degree to which behaviour stimulates instrumental rewards (extrinsic motives) and/or internal reinforcement, such as enjoyment, satisfaction and fun (intrinsic motives) (Davis, Bagozzi & Warshaw, 1992).

2.9 Quality Acceptance Model (TAM)

The technology acceptance model (TAM) is an information systems theory that models how users come to accept and use a technology. The actual system use is the end-point where people use the technology. Behavioral intention is a factor that leads people to use the technology. The behavioral intention (BI) is influenced by the attitude (A) which is the general impression of the technology. The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it, notably:

Perceived usefulness (PU) – This was defined by Fred Davis as "the degree to which a person believes that using a particular system would enhance their job performance". It meanswhether or not someone perceives that technology to be useful

for what they want to do. Perceived ease-of-use (PEOU) – Davis defined this as "the degree to which a person believes that using a particular system would be free from effort" (Davis 1989). If the technology is easy to use, then the barriers conquered. If it's not easy to use and the interface is complicated, no one has a positive attitude towards it. External variables such as social influence is an important factor to determine the attitude. When these things (TAM) are in place, people will have the attitude and intention to use the technology. However, the perception may change depending on age and gender because everyone is different.

CHAPTER 3

METHODOLOGY OF THE STUDY

3.1 Research Design

It was quantitative research in nature and survey design was used to conduct theresearch.

3.2 Population

Burns and Grove (1993) defined population as, “all elements (individuals, objects, and events) that meet the sample criteria for inclusion in a study”. A research population is known as, “a well-defined collection of individuals or objects known to have similar characteristics.” All individuals are objects within a certain population usually have common binding characteristic or trait. The population of the study was comprised of male students of Sir Syed College and Punjab group of colleges (Satellite Town College). Total number of colleges at Rawalpindi are Public 09 and Private 46. So 2nd year pre engineering students were selected as a population.

3.3 Sample/Sampling

Sample is a subset of population which is considered a truly representative of the population by a researcher, it is portion of the whole, selected to participate in the research project (Brink, 1996). The process of selecting a portion of the population to represent the entire population is known as sampling (Wood & Haber 1999). The sample of the study was comprised of 227 students of public and private colleges at Rawalpindi. One hundred students having maximum marks in 1st year from each college was selected.

3.4 Instrument

For this study a questionnaire was prepared and data were collected through three point Likert Scale. Questionnaires was prepared after a thorough study of the literature. Gay describes, “A Likert scale requires an individual to respond to a series of statements by indicating whether he or she Strongly agrees (SA), Agree(A), undecided (UN), Disagree (DA) and Strongly Disagree (SDA). Each response is assigned a point value, and an individual’s score is determined by adding the point values of all the statements”. The questionnaire includes information regarding effectiveness and improvement after and before use of smartphone, questionnaire was based on five rating scale (5- strongly agree to strongly disagree. The questionnaire was about.

i. Academic Achievements
ii. Source of Information
iii. Enhancement of Knowledge
iv. Source of Learning
v. Online Lectures
vi. Improvement

3.5 Validity

Validity is defined as a measure of truth or falsity of the data obtained through using the research instrument (Burns & Grove, 2001). Content validity was determined from the review of related literature in consultation with experts and personal involvements of the researcher. The validity certificates obtained from the Experts.

3.6 Pilot Testing

Pilot testing is a small-scale trial, where a few examinees take the test and comment on the mechanics of the test. They point out any problems with the test instructions, instances where items are not clear and formatting and other typographical errors and/or issues. The purpose is to make sure that respondents understand the questions and also they all understand them in the same way. After reviewing and updating the questionnaires through experts, these two questionnaires were sent to 12 participants, which were not included in the sample. After getting back filled questionnaires from them, they were further amended and improved in light of the respondents' feedback

3.6.1 Reliability

Reliability is the degree of consistency with which the instrument measures an attribute or characteristic (Polit & Hungler, 1999). The reliability of the questionnaire was investigated by Split-half test, using SPPS. The reliability coefficients of the questionnaire are given below:

Table 3.3 Overall *Reliability of the Questionnaire*

S. No	Questionnaire	Reliability
1	Questionnaire for Students	.89

3.7 Procedure (Data Collection)

In this study, data were collected by using close ended questionnaire. The researcher approaches every respondent and distribute the questionnaires among the selected samples. Before giving the questionnaire the purpose of the study was described and instructions were given about how to fill up the questionnaire. A well-structured questionnaire was prepared and distributed to the college students of private and public colleges of Rawalpindi for the purpose of data collection.

3.8 Data Analysis

It was a quantitative study. Data were analyses by using SPSS (Version,24) Software and Percentages, frequencies, Mean and standard deviation was used. The result of the analyzed data were present in the form of tables.

3.9 Ethical Consideration

a) Confidentiality: The participants were guaranteed that the identifying information would not be made available to anyone who is not involved in the study and it would remain confidential for the purpose it is intended for.

b) Permission: The researcher sought prior permission to carry out the research from the University.

c) Informed consent: The research participants were fully informed about the procedures involved in the research and they were asked to give their consent to participate. The participants would remain anonymous throughout the study.

CHAPTER 4

DATA ANALYSIS AND INTERPRETATION

The research was aimed at academic use of smartphone: a comparative study of public and private colleges at Rawalpindi. The data collection was done through questionnaires and then it was encoded, tabulated, analyzed and then interpreted through SPSS (Version, 24).

4.1 Analysis of Questionnaire

Objective 1: To find out the students' perceived ease of use of a smartphone in learning activities in private and public colleges

Table 4.1 *I have a Smartphone*

	Frequency	Percent	Mean	Std. Deviation
SDA	11	5.2		
DA	12	5.6		
N	7	3.3	4.0610	1.04206
A	106	49.8		
SA	77	36.2		
Total	213	100.0		

Table 4.1 depicts that (36%) strongly agreed, (50%) agreed, (3%) neutral, (7%) disagreed and (5%) strongly disagreed with the statement that I have a smartphone. The value of mean score (4.06) favoured in the statement. Thus, it is founded that majority (86%) teachers agreed with the statement that I have a smartphone.

Table 4.2 *I can use Learning Management System (LMS) [Online Applications] for the Presentation of Information*

	Frequency	Percent	Mean	Std. Deviation
SDA	108	50.7		
DA	97	45.5		
N	3	1.4	4.4319	.70798
A	02	0.9		
SA	03	1.4		
Total	213	100.0		

Table 4.2 depicts that (1%) strongly agreed, (.9%) agreed, (1%) neutral, (46%) disagreed and (51%) strongly disagreed with the statement that I can use Learning Management System (LMS) [Online Applications] for the presentation of information. The value of mean score (4.43) favoured in the statement. Thus, it is founded that majority (96%) disagreed with the statement that I can use Learning Management System (LMS) [Online Applications] for the presentation of information.

Table 4.3 *I can use LMS to Answer the Questions/Queries asked by Teachers*

	Frequency	Percent	Mean	Std. Deviation
SDA	101	47.4		
DA	104	48.8		
N	2	.9	4.3897	.73542
A	02	0.9		
SA	04	1.9		
Total	213	100.0		

Table 4.3 depicts that (2%) strongly agreed, (1%) agreed, (1%) neutral, (49%) agreed and (47%) strongly disagreed with the statement that I can use LMS to answer the questions/queries asked by teachers. The value of mean score (4.38) favoured in the statement. Thus, it is founded that majority (96%) disagreed with the statement that I can use LMS to answer the questions/queries asked by teachers.

Table 4.4 *I can Create Digital Documents and Notes*

	Frequency	Percent	Mean	Std. Deviation
SDA	3	1.4		
DA	3	1.4		
N	2	.9	4.3192	.70138
A	120	56.3		
SA	85	39.9		
Total	213	100.0		

Table 4.4 depicts that (40%) strongly agreed, (56%) agreed, (1%) neutral, (1%) agreed and (1%) teacher strongly disagreed with the statement that I can create digital documents and notes. The value of mean score (4.31) favoured in the statement. Thus, it is founded that majority (97%) agreed with the statement that I can create digital documents and notes.

Table 4.5 *I can Attach/Send Digital Document to Teachers with no Difficulty*

	Frequency	Percent	Mean	Std. Deviation
SDA	3	1.4		
DA	2	.9		
N	3	1.4	4.3380	.69249
A	117	54.9		
SA	88	41.3		
Total	213	100.0		

Table 4.5 depicts that (41%) teachers strongly agreed, (55%) agreed, (1%) neutral, (1%) agreed and (1%) teacher strongly disagreed with the statement that I can attach/send digital document to teachers with no difficulty. The value of mean score (4.33) favoured in the statement. Thus, it is founded that majority (96%) agreed with the statement that I can attach/send digital document to teachers with no difficulty.

Table 4.6 *I can Efficiently use Zoom or Similar Applications for Online Lectures by using Smartphone*

	Frequency	Percent	Mean	Std. Deviation
SDA	3	1.4		
DA	2	.9		
N	3	1.4	4.3568	.69663
A	113	53.1		
SA	92	43.2		
Total	213	100.0		

Table 4.6 depicts that (43%) strongly agreed, (53%) agreed, (1%) neutral, (1%) agreed and (1%) strongly disagreed with the statement that I can efficiently use Zoom or Similar Applications for Online lectures by using smartphone. The value of mean score (4.35) favoured in the statement. Thus, it is founded that majority (96%) agreed with the statement that I can efficiently use Zoom or Similar Applications for Online lectures by using smartphone.

Table 4.7 *I can use online Dictionary for improvement of my English Language on Smartphone*

	Frequency	Percent	Mean	Std. Deviation
SDA	1	.5		
DA	3	1.4		
A	126	59.2	4.3474	.60770
SA	83	39.0		
Total	213	100.0		

Table 4.7 depicts that (39%) strongly agreed, (59%) agreed, (0%) neutral, (1%) agreed and (1%) strongly disagreed with the statement that I can use online Dictionary for improvement of my English Language on Smartphone. The value of mean score (4.34) favoured in the statement. Thus, it is founded that majority (98%) agreed with the statement that I can use online Dictionary for improvement of my English Language on Smartphone.

Table 4.8 *I have good experience of online class than face to face class*

	Frequency	Percent	Mean	Std. Deviation
SDA	1	.5		
DA	3	1.4		
A	126	59.2	4.3474	.60770
SA	83	39.0		
Total	213	100.0		

Table 4.8 depicts that (39%) strongly agreed, (59%) agreed, (0%) neutral, (1%) agreed and (1%) strongly disagreed with the statement that I have good experience of online class than face to face class. The value of mean score (4.34) favoured in the statement. Thus, it is founded that majority (98%) agreed with the statement that I have good experience of online class than face to face class.

Table 4.9 *I can upload notes, videos in the portal for the purpose*

	Frequency	Percent	Mean	Std. Deviation
SDA	1	.5		
DA	3	1.4		
A	129	60.6	4.3333	.60397
SA	80	37.6		
Total	213	100.0		

Table 4.9 depicts that (37%) strongly agreed, (61%) agreed, (0%) neutral, (1%) agreed and (1%) strongly disagreed with the statement that I can upload notes, videos in the portal for the purpose. The value of mean score (4.33) favoured in the statement. Thus, it is founded that majority (98%) agreed with the statement that I can upload notes, videos in the portal for the purpose.

Table 4.10 *I can use WhatsApp for group discussion between students for online teacher-student interaction*

	Frequency	Percent	Mean	Std. Deviation
SDA	1	.5		
DA	4	1.9		
A	117	54.9	4.3756	.63674
SA	91	42.7		
Total	213	100.0		

Table 4.10 depicts that (43%) strongly agreed, (55%) agreed, (0%) neutral, (2%) agreed and (1%) strongly disagreed with the statement that I can use WhatsApp for group discussion between students for online teacher-student interaction. The value of mean score (4.37) favoured in the statement. Thus, it is founded that majority (97%) agreed with the statement that I can use WhatsApp for group discussion between students for online teacher-student interaction.

Table 4.11 I can utilize all the Smartphone information easily

	Frequency	Percent	Mean	Std. Deviation
SDA	12	5.6		
DA	16	7.5		
N	5	2.3	4.0141	1.09234
A	104	48.8		
SA	76	35.7		
Total	213	100.0		

Table 4.11 depicts that (35%) strongly agreed, (49%) agreed, (2%) neutral, (8%) agreed and (7%) strongly disagreed with the statement that I can utilize all the Smartphone information easily. The value of mean score (4.01) favoured in the statement. Thus, it is founded that majority (83%) agreed with the statement that I can utilize all the Smartphone information easily.

Table 4.12.1 *Opinions of Public College Students about perceived ease of use of a smartphone in learning activities*

Statement	Mean	S.D
I have a smartphone.	3.67543	.90875
I can use LMS to answer the questions/queries asked by teachers.	3.8908	.54673
I can use Learning Management System (LMS) [Online Applications] for the presentation of information.	3.5643	.7315
I can create digital documents and notes.	3.4532	.34744
I can attach/send digital document to teachers with no difficulty.	3.7892	.89094
I can efficiently use Zoom or Similar Applications for Online lectures by using smartphone.	3.5892	.87659
I can use online Dictionary for improvement of my English Language on Smartphone.	3.55674	.65239
I have good experience of online class than face to face class.	3.21349	.44578
I can upload notes, videos in the portal for the purpose.	3.6783	.90876
I can use WhatsApp for group discussion between students for online teacher-student interaction.	3.7658	.87690
I can utilize all the Smartphone information easily.	3.5690	.67854

Table 4.12.1 reveals the Opinions of Public College Students about perceived ease of use of a smartphone in learning activities. The mean score and standard deviation (M= 3.67543, SD= .90875) regarding I have a smartphone. The mean score and standard deviation (M= 3.8908, SD= .54673) regarding I can use LMS to answer the questions/queries asked by teachers. The mean score and standard deviation (M= 3.5643, SD= .7315) regarding I can use Learning Management System (LMS) [Online Applications] for the presentation of information. The mean score and standard deviation (M= 3.4532, SD= .34744) regarding I can create digital documents

and notes. The mean score and standard deviation (M= 3.7892, SD= .89094) regarding I can attach/send digital document to teachers with no difficulty. The mean score and standard deviation (M= 3.5892, SD= .87659) regarding I can efficiently use Zoom or Similar Applications for Online lectures by using smartphone. The mean score and standard deviation (M= 3.55674, SD= .65239) regarding I can use online Dictionary for improvement of my English Language on Smartphone. The mean score and standard deviation (M= 3.21349, SD= .44578) regarding I have good experience of online class than face to face class. The mean score and standard deviation (M= 3.6783, SD= .90876) regarding I can upload notes, videos in the portal for the purpose. The mean score and standard deviation (M= 3.7658, SD= .87690) regarding I can use WhatsApp for group discussion between students for online teacher-student interaction. The mean score and standard deviation (M= 3.5690, SD= .67854) regarding I can utilize all the Smartphone information easily.

Table 4.12.2 *Opinions of Private College Students about perceived ease of use of a smartphone in learning activities*

Statement	Mean	S.D
I have a smartphone.	3.4643	.56895
I can use LMS to answer the questions/queries asked by teachers.	3.5560	.89765
I can use Learning Management System (LMS) [Online Applications] for the presentation of information.	3.5709	.89741
I can create digital documents and notes.	3.2165	.78960
I can attach/send digital document to teachers with no difficulty.	3.4531	.98329
I can efficiently use Zoom or Similar Applications for Online lectures by using smartphone.	3.6670	.95069
I can use online Dictionary for improvement of my English Language on Smartphone.	3.5432	.89076

I have good experience of online class than face to face class.	3.4560	.87540
I can upload notes, videos in the portal for the purpose.	3.6575	.89041
I can use WhatsApp for group discussion between students for online teacher-student interaction.	3.4536	.78654
I can utilize all the Smartphone information easily.	3.7864	.67546

Table 4.12.2 reveals the Opinions of Private College Students about perceived ease of use of a smartphone in learning activities. The mean score and standard deviation (M= 3.4643, SD= .56895) regarding I have a smartphone. The mean score and standard deviation (M= 3.5560, SD= .89765) regarding I can use LMS to answer the questions/queries asked by teachers. The mean score and standard deviation (M= 3.5709, SD= .89741) regarding I can use Learning Management System (LMS) [Online Applications] for the presentation of information. The mean score and standard deviation (M= 3.2165, SD= .78960) regarding I can create digital documents and notes. The mean score and standard deviation (M= 3.4531, SD= .98329) regarding I can attach/send digital document to teachers with no difficulty. The mean score and standard deviation (M= 3.6670, SD= .95069) regarding I can efficiently use Zoom or Similar Applications for Online lectures by using smartphone. The mean score and standard deviation (M= 3.5432, SD= .89076) regarding I can use online Dictionary for improvement of my English Language on Smartphone. The mean score and standard deviation (M= 3.4560, SD= .87540) regarding I have good experience of online class than face to face class. The mean score and standard deviation (M= 3.6575, SD= .89041) regarding I can upload notes, videos in the portal for the purpose. The mean score and standard deviation (M= 3.4536, SD= .78654) regarding I can use WhatsApp for group discussion between students for online teacher-student

interaction. The mean score and standard deviation (M= 3.7864, SD= .67546) regarding I can utilize all the Smartphone information easily.

Objective 2: To find out the effectiveness of smartphones on the students' academic achievement in private and public colleges

Table 4.13 *I am aware of academic use of smartphone*

	Frequency	Percent	Mean	Std. Deviation
SDA	4	1.9		
A	101	47.4	4.4507	.68931
SA	108	50.7		
Total	213	100.0		

Table 4.13 depicts that (51%) strongly agreed, (47%) agreed, (0%) neutral, (0%) agreed and (2%) strongly disagreed with the statement that I am aware of academic use of smartphone. The value of mean score (4.45) favored in the statement. Thus, it is founded that majority (98%) agreed with the statement that I am aware of academic use of smartphone.

Table 4.14 *I can use Google Meet to create a meeting and share its link*

	Frequency	Percent	Mean	Std. Deviation
SDA	103	48.4		
DA	106	49.8	4.4272	.68722
SA	4	1.9		
Total	213	100.0		

Table 4.14 depicts that (48%) strongly disagreed, (50%) disagreed, (0%) neutral, (0%) agreed and (2%) strongly agreed with the statement that I can use Google Meet to create a meeting and share its link. The value of mean score (4.42)

favored in the statement. Thus, it is founded that majority (98%) disagreed with the statement that I can use Google Meet to create a meeting and share its link.

Table 4.15 *I can collect information from internet of topics as given in the syllabus*

	Frequency	Percent	Mean	Std. Deviation
SDA	5	2.3		
DA	4	1.9		
A	98	46.0	4.3897	.79698
SA	106	49.8		
Total	213	100.0		

Table 4.15 depicts that (50%) strongly agreed, (46%) agreed, (0%) neutral, (2%) agreed and (2%) strongly disagreed with the statement that I can collect information from internet of topics as given in the syllabus. The value of mean score (4.38) favoured in the statement. Thus, it is founded that majority (96%) agreed with the statement that I can collect information from internet of topics as given in the syllabus.

Table 4.16 *I can use WhatsApp to send notifications, notes, documents, lectures (audio/video) to the fellows*

	Frequency	Percent	Mean	Std. Deviation
SDA	8	3.8		
DA	3	1.4		
A	100	46.9	4.3380	.87324
SA	102	47.9		
Total	213	100.0		

Table 4.16 depicts that (48%) strongly agreed, (47%) agreed, (0%) neutral, (1%) agreed and (4%) strongly disagreed with the statement that I can use WhatsApp to send notifications, notes, documents, lectures (audio/video) to the fellows. The value of mean score (4.33) favoured in the statement. Thus, it is founded that majority (95%) agreed with the statement that I can use WhatsApp to send notifications, notes, documents, lectures (audio/video) to the fellows.

Table 4.17 *I can transfer files from smart phone to computer*

	Frequency	Percent	Mean	Std. Deviation
SDA	8	3.8		
DA	2	.9		
A	95	44.6	4.3756	.86317
SA	108	50.7		
Total	213	100.0		

Table 4.17 depicts that (51%) strongly agreed, (45%) agreed, (0%) neutral, (1%) agreed and (4%) strongly disagreed with the statement that I can transfer files from smart phone to computer. The value of mean score (4.37) favoured in the statement. Thus, it is founded that majority (95%) agreed with the statement that I can transfer files from smart phone to computer.

Table 4.18 *I feel that use of Smartphone improve the grades of the students*

	Frequency	Percent	Mean	Std. Deviation
SDA	8	3.8		
A	95	44.6	4.4038	.83349
SA	110	51.6		
Total	213	100.0		

Table 4.18 depicts that (52%) strongly agreed, (45%) agreed, (0%) neutral, (0%) agreed and (4%) strongly disagreed with the statement that I feel that use of Smartphone improve the grades of the students. The value of mean score (4.40) favoured in the statement. Thus, it is founded that majority (96%) agreed with the statement that I feel that use of Smartphone improve the grades of the students.

Table 4.19 *I can use Gmail efficiently for transfer of file and documents*

	Frequency	Percent	Mean	Std. Deviation
SDA	2	.9		
DA	5	2.3		
N	1	.5	4.4366	.71505
A	95	44.6		
SA	110	51.6		
Total	213	100.0		

Table 4.19 depicts that (52%) strongly agreed, (45%) agreed, (1%) neutral, (3%) agreed and (1%) strongly disagreed with the statement that I can use Gmail efficiently for transfer of file and documents. The value of mean score (4.43) favoured in the statement. Thus, it is founded that majority (95%) agreed with the statement that I can use Gmail efficiently for transfer of file and documents.

Table 4.20 *I am satisfied with e-learning/online class at collage*

	Frequency	Percent	Mean	Std. Deviation
SDA	108	50.7		
DA	88	41.3		
N	01	0.5	4.3146	.95148
A	08	3.8		
SA	08	3.8		
Total	213	100.0		

Table 4.20 depicts that (4%) strongly agreed, (4%) agreed, (1%) neutral, (41%) agreed and (51%) strongly disagreed with the statement that I am satisfied with e-learning/online class at collage. The value of mean score (4.41) favoured in the statement. Thus, it is founded that majority (91%) disagreed with the statement that I am satisfied with e-learning/online class at collage.

Table 4.21 *I think Smartphone applications help to increase vocabulary in classroom*

	Frequency	Percent	Mean	Std. Deviation
SDA	4	1.9		
DA	5	2.3		
N	1	.5	4.4085	.78748
A	93	43.7		
SA	110	51.6		
Total	213	100.0		

Table 4.21 depicts that (52%) strongly agreed, (44%) agreed, (1%) neutral, (2%) agreed and (2%) strongly disagreed with the statement that I think Smartphone applications help to increase vocabulary in classroom. The value of mean score (4.40) favoured in the statement. Thus, it is founded that majority (95%) agreed with the statement that I think Smartphone applications help to increase vocabulary in classroom.

Table 4.22 *Teachers Use Handmade Colourful Posters To Teach English Language*

	Frequency	Percent	Mean	Std. Deviation
SDA	3	1.4		
DA	5	2.3		
N	1	.5	4.4085	.75068
A	97	45.5		
SA	107	50.2		
Total	213	100.0		

Table 4.22 depicts that (50%) teachers strongly agreed, (46%) agreed, (1%) neutral, (2%) agreed and (2%) teacher strongly disagreed with the statement that Teachers use handmade colorful posters to teach English language. The value of mean score (4.40) favoured in the statement. Thus, it is founded that majority (95%) teachers agreed with the statement that Teachers use handmade colorful posters to teach English language.

Table 4.23 *Smartphone provides extra-large relevant information*

	Frequency	Percent	Mean	Std. Deviation
SDA	7	3.3		
DA	1	.5		
N	1	.5	4.3474	.81348
A	106	49.8		
SA	98	46.0		
Total	213	100.0		

Table 4.23 depicts that (46%) strongly agreed, (50%) agreed, (1%) neutral, (1%) agreed and (3%) strongly disagreed with the statement that Smartphone provides extra-large relevant information. The value of mean score (4.34) favoured in the statement. Thus, it is founded that majority (95%) agreed with the statement that Smartphone provides extra-large relevant information.

Table 4.28.1 *Opinions of Public College Students about effectiveness of smartphones to enhancement of knowledge and Information*

Statement	Mean	S.D
I am aware of academic use of smartphone.	3.5417	.83056
I can use Google Meet to create a meeting and share its link.	3.7708	.95069
I can collect information from internet of topics as given in the syllabus.	3.6042	.79197
I can use WhatsApp to send notifications, notes, documents, lectures (audio/video) to the fellows.	3.3750	.76144
I can transfer files from smart phone to computer.	3.5405	.03056
I feel that use of Smartphone improve the grades of the students.	3.5198	.95069
I can use Gmail efficiently for transfer of file and documents.	3.4152	.79197
I am satisfied with e-learning/online class at collage.	3.3163	.76144

I think Smartphone applications help to increase vocabulary in classroom.	3.5126	.03156
Smartphone provides extra-large relevant information.	3.8414	.95069

Table 4.28.1 reveals the Opinions of Public College Students about effectiveness of smartphones to enhancement of knowledge and Information. The mean score and standard deviation (M= 3.5417, SD= .83056) regarding I am aware of academic use of smartphone. The mean score and standard deviation (M= 3.7708, SD= .95069) regarding I can use Google Meet to create a meeting and share its link. The mean score and standard deviation (M= 3.6042, SD= .79197) regarding I can collect information from internet of topics as given in the syllabus. The mean score and standard deviation (M= 3.3750, SD= .76144) regarding I can use WhatsApp to send notifications, notes, documents, lectures (audio/video) to the fellows. The mean score and standard deviation (M= 3.5405, SD= .03056) regarding I can transfer files from smart phone to computer. The mean score and standard deviation (M= 3.5198, SD= .95069) regarding I feel that use of Smartphone improve the grades of the students. The mean score and standard deviation (M= 3.4152, SD= .79197) regarding I can use Gmail efficiently for transfer of file and documents. The mean score and standard deviation (M= 3.3163, SD= .76144) regarding I am satisfied with e-learning/online class at collage. The mean score and standard deviation (M= 3.5126, SD= .03156) regarding I think Smartphone applications help to increase vocabulary in classroom. The mean score and standard deviation (M= 3.8414, SD= .95069) regarding Smartphone provides extra-large relevant information.

Table 4.28.2 *Opinions of Private College Students about effectiveness of smartphones to enhancement of knowledge and Information*

Statement	Mean	S.D
I am aware of academic use of smartphone.	3.3421	.97410
I can use Google Meet to create a meeting and share its link.	3.6732	.67419
I can collect information from internet of topics as given in the syllabus.	3.5485	.96734
I can use WhatsApp to send notifications, notes, documents, lectures (audio/video) to the fellows.	3.8642	.67841
I can transfer files from smart phone to computer.	3.6513	.87941
I feel that use of Smartphone improve the grades of the students.	3.8763	.80963
I can use Gmail efficiently for transfer of file and documents.	3.7853	.98435
I am satisfied with e-learning/online class at collage.	3.2154	.75893
I think Smartphone applications help to increase vocabulary in classroom.	3.6429	.78301
Smartphone provides extra-large relevant information.	3.5784	.90873

Table 4.28.2 reveals the Opinions of Private College Students about effectiveness of smartphones to enhancement of knowledge and Information. The mean score and standard deviation (M= 3.3421, SD= .97410) regarding I am aware of academic use of smartphone. The mean score and standard deviation (M= 3.6732, SD= .67419) regarding I can use Google Meet to create a meeting and share its link. The mean score and standard deviation (M= 3.5485, SD= .96734) regarding I can collect information from internet of topics as given in the syllabus. The mean score and standard deviation (M= 3.8642, SD= .67841) regarding I can use WhatsApp to send notifications, notes, documents, lectures (audio/video) to the fellows. The mean

score and standard deviation (M= 3.6513, SD= .87941) regarding I can transfer files from smart phone to computer. The mean score and standard deviation (M= 3.8763, SD= .80963) regarding I feel that use of Smartphone improve the grades of the students. The mean score and standard deviation (M= 3.7853, SD= .98435) regarding I can use Gmail efficiently for transfer of file and documents. The mean score and standard deviation (M= 3.2154, SD= .75893) regarding I am satisfied with e-learning/online class at collage. The mean score and standard deviation (M= 3.6429, SD= .78301) regarding I think Smartphone applications help to increase vocabulary in classroom. The mean score and standard deviation (M= 3.5784, SD= .90873) regarding Smartphone provides extra-large relevant information.

Objectives 3: To find out the effectiveness of smartphones to enhancement of knowledge and Information of students in private and public colleges

Table 4.29 *I use Smartphone for education*

	Frequency	Percent	Mean	Std. Deviation
SDA	6	2.8		
DA	8	3.8		
N	1	.5	4.3568	.89780
A	87	40.8		
SA	111	52.1		
Total	213	100.0		

Table 4.29 depicts that (52%) strongly agreed, (41%) agreed, (1%) neutral, (4%) agreed and (3%) strongly disagreed with the statement that I use Smartphone for education. The value of mean score (4.35) favoured in the statement. Thus, it is founded that majority (92%) agreed with the statement that I use Smartphone for education.

Table 4.30 *I think Students use Smartphone in the classroom for information*

	Frequency	Percent	Mean	Std. Deviation
SDA	6	2.8		
DA	5	2.3		
N	2	.9	4.3850	.85900
A	88	41.3		
SA	112	52.6		
Total	213	100.0		

Table 4.30 depicts that (53%) strongly agreed, (41%) agreed, (1%) neutral, (2%) agreed and (3%) strongly disagreed with the statement that I think Students use Smartphone in the classroom for information. The value of mean score (4.38) favoured in the statement. Thus, it is founded that majority (94%) agreed with the statement that I think Students use Smartphone in the classroom for information.

Table 4.31 *I deal with more than one target at a time*

	Frequency	Percent	Mean	Std. Deviation
SDA	7	3.3		
DA	5	2.3		
N	1	.5	4.3850	.88603
A	86	40.4		
SA	114	53.5		
Total	213	100.0		

Table 4.31 depicts that (54%) strongly agreed, (40%) agreed, (1%) neutral, (2%) agreed and (4%) strongly disagreed with the statement that I deal with more than one target at a time. The value of mean score (4.38) favoured in the statement. Thus, it is founded that majority (93%) agreed with the statement that I deal with more than one target at a time.

Table 4.32 *I can download targeted information easily on Smartphone*

	Frequency	Percent	Mean	Std. Deviation
SDA	7	3.3		
DA	6	2.8		
N	1	.5	4.3756	.90061
A	85	39.9		
SA	114	53.5		
Total	213	100.0		

Table 4.32 depicts that (54%) strongly agreed, (40%) agreed, (1%) neutral, (2%) agreed and (3%) strongly disagreed with the statement that I can download targeted information easily on Smartphone. The value of mean score (4.37) favoured in the statement. Thus, it is founded that majority (93%) agreed with the statement that I can download targeted information easily on Smartphone.

Table 4.33 *I can transfer files from smart phone to computer*

	Frequency	Percent	Mean	Std. Deviation
SDA	6	2.8		
DA	7	3.3		
N	1	.5	4.3803	.88541
A	85	39.9		
SA	114	53.5		
Total	213	100.0		

Table 4.33 depicts that (54%) strongly agreed, (40%) agreed, (1%) neutral, (3%) agreed and (3%) strongly disagreed with the statement that I can transfer files from smart phone to computer. The value of mean score (4.38) favoured in the statement. Thus, it is founded that majority (94%) agreed with the statement that I can transfer files from smart phone to computer.

Table 4.34 *I use Smartphone for general information*

	Frequency	Percent	Mean	Std. Deviation
SDA	6	2.8		
DA	11	5.2		
N	2	.9	4.3380	.94585
A	80	37.6		
SA	114	53.5		
Total	213	100.0		

Table 4.34 depicts that (54%) strongly agreed, (38%) agreed, (1%) neutral, (5%) agreed and (3%) strongly disagreed with the statement that I use Smartphone for general information. The value of mean score (4.33) favoured in the statement. Thus, it is founded that majority (91%) agreed with the statement that I use Smartphone for general information.

Table 4.35 *Students use Smartphone to verify information in classroom*

	Frequency	Percent	Mean	Std. Deviation
SDA	4	1.9		
DA	6	2.8		
N	2	.9	4.3615	.80436
A	98	46.0		
SA	103	48.4		
Total	213	100.0		

Table 4.35 depicts that (48%) strongly agreed, (46%) agreed, (1%) neutral, (3%) agreed and (2%) strongly disagreed with the statement that Students use Smartphone to verify information in classroom. The value of mean score (4.36) favoured in the statement. Thus, it is founded that majority (94%) agreed with the statement that Students use Smartphone to verify information in classroom.

Table 4.36 *I use Smartphone for entertainment*

	Frequency	Percent	Mean	Std. Deviation
SDA	6	2.8		
DA	8	3.8		
N	2	.9	4.3005	.89224
A	97	45.5		
SA	100	46.9		
Total	213	100.0		

Table 4.36 depicts that (47%) strongly agreed, (46%) agreed, (1%) neutral, (4%) agreed and (3%) strongly disagreed with the statement that I use Smartphone for entertainment. The value of mean score (4.30) favoured in the statement. Thus, it is founded that majority (92%) agreed with the statement that I use Smartphone for entertainment.

Table 4.37 *I concentrate on a single target at a time*

	Frequency	Percent	Mean	Std. Deviation
SDA	2	.9		
DA	3	1.4		
N	3	1.4	4.4507	.68931
A	94	44.1		
SA	111	52.1		
Total	213	100.0		

Table 4.37 depicts that (52%) strongly agreed, (44%) agreed, (1%) neutral, (1%) agreed and (1%) strongly disagreed with the statement that I concentrate on a single target at a time. The value of mean score (4.45) favoured in the statement. Thus, it is founded that majority (97%) agreed with the statement that I concentrate on a single target at a time.

Table 4.38 *Do you use Smartphone to record lectures during lecture?*

	Frequency	Percent	Mean	Std. Deviation
SDA	2	.9		
DA	5	2.3		
N	1	.5	4.4366	.71505
A	95	44.6		
SA	110	51.6		
Total	213	100.0		

Table 4.38 depicts that (52%) strongly agreed, (45%) agreed, (1%) neutral, (2%) agreed and (1%) strongly disagreed with the statement that Do you use Smartphone to record lectures during lecture. The value of mean score (4.43) favoured in the statement. Thus, it is founded that majority (96%) agreed with the statement that Do you use Smartphone to record lectures during lecture.

Table 4.36 *I use Smartphone get material related my study*

	Frequency	Percent	Mean	Std. Deviation
SDA	6	2.8		
DA	8	3.8		
N	2	.9	4.3005	.89224
A	97	45.5		
SA	100	46.9		
Total	213	100.0		

Table 4.36 depicts that (47%) strongly agreed, (46%) agreed, (1%) neutral, (4%) agreed and (3%) strongly disagreed with the statement that I use Smartphone get material related my study. The value of mean score (4.30) favoured in the statement. Thus, it is founded that majority (92%) agreed with the statement that I use Smartphone get material related my study.

Table 4.38.1 *Opinions of Public School Students about effectiveness of smartphones to enhancement of knowledge and Information*

Statement	Mean	S.D
I use Smartphone for education.	3.6754	.8752
I think Students use Smartphone in the classroom for information.	3.3986	.9321
I deal with more than one target at a time.	3.6586	.9783
I can download targeted information easily on Smartphone.	3.2387	.6785
I can transfer files from smart phone to computer.	3.2364	.8751
I use Smartphone for general information.	3.5673	.5312
Students use Smartphone to verify information in classroom.	3.8752	.6780
I use Smartphone for entertainment.	3.6749	.5643
I concentrate on a single target at a time.	3.5423	.4578
Do you use Smartphone to record lectures during lecture?	3.6537	.8752

Table 4.38.1 reveals the Opinions of Public School Students about effectiveness of smartphones to enhancement of knowledge and Information. The mean score and standard deviation (M= 3.6754, SD= .8752) regarding I use Smartphone for education. The mean score and standard deviation (M= 3.3986, SD= .9321) regarding I think Students use Smartphone in the classroom for information. The mean score and standard deviation (M= 3.6586, SD= .9783) regarding I deal with more than one target at a time. The mean score and standard deviation (M= 3.2387, SD= .6785) regarding I can download targeted information easily on Smartphone. The mean score and standard deviation (M= 3.2364, SD= .8751) regarding I can transfer files from smart phone to computer. The mean score and standard deviation (M= 3.5673, SD= .5312) regarding I use Smartphone for general information. The mean score and

standard deviation (M= 3.8752, SD= .6780) regarding Students use Smartphone to verify information in classroom. The mean score and standard deviation (M= 3.6749, SD= .5643) regarding I use Smartphone for entertainment. The mean score and standard deviation (M= 3.5423, SD= .4578) regarding I concentrate on a single target at a time. The mean score and standard deviation (M= 3.6537, SD= .8752) regarding absence of proper guidance of how to use the appropriate strategies for teaching English.

Table 4.38.2 *Opinions of Private School Students about effectiveness of smartphones to enhancement of knowledge and Information*

Statement	Mean	S.D
I use Smartphone for education.	3.5643	.87410
I think Students use Smartphone in the classroom for information.	3.7640	.56319
I deal with more than one target at a time.	3.5765	.96734
I can download targeted information easily on Smartphone.	3.6540	.55841
I can transfer files from smart phone to computer.	3.8964	.78941
I use Smartphone for general information.	3.8763	.80963
Students use Smartphone to verify information in classroom.	3.6743	.68435
I use Smartphone for entertainment.	3.7864	.70893
I concentrate on a single target at a time.	3.6742	.3458
Do you use Smartphone to record lectures during lecture?	3.7895	.78573

Table 4.38.2 reveals the Opinions of Private School Students about effectiveness of smartphones to enhancement of knowledge and Information. The mean score and standard deviation (M= 3.5643, SD= .87410) regarding I use Smartphone for education. The mean score and standard deviation (M= 3.7640, SD=

.56319) regarding I think Students use Smartphone in the classroom for information. The mean score and standard deviation (M= 3.5765, SD= .96734) regarding I deal with more than one target at a time. The mean score and standard deviation (M= 3.6540, SD= .55841) regarding I can download targeted information easily on Smartphone. The mean score and standard deviation (M= 3.8964, SD= .78941) regarding I can transfer files from smart phone to computer. The mean score and standard deviation (M= 3.8763, SD= .80963) regarding I use Smartphone for general information. The mean score and standard deviation (M= 3.6743, SD= .68435) regarding Students use Smartphone to verify information in classroom. The mean score and standard deviation (M= 3.7864, SD= .70893) regarding I use Smartphone for entertainment. The mean score and standard deviation (M= 3.6742, SD= .3458) regarding I concentrate on a single target at a time. The mean score and standard deviation (M= 3.7895, SD= .78573) regarding I use Smartphone get material related my study.

CHAPTER 5

SUMMARY, FINDINGS, DISCUSSION, CONCLUSIONS AND RECOMENDATIONS

5.1 Summary

In recent days, digital technology changes so rapidly and integrates into our society, it is hard to keep up with it, let alone reflect on the effectiveness has on our lives. The Internet is very useful for a variety of purposes, such as convenient electronic commerce, rapid sharing of information, contact with other cultures, emotional support and entertainment. Currently, the use of smartphones performs phenomenal roles as far as teaching and learning are concerned. For instance, students can access their lecture materials on their smartphones, quickly access information online to meet their information needs via learning management systems, access academic databases, and a website to mention but a few. The study was based on the following objectives: To find out the students' perceived ease of use of a smartphone in learning activities in private and public colleges, to find out the effectiveness of smartphones on the students' academic achievement in private and public colleges and to find out the effectiveness of smartphones to enhancement of knowledge andinformation of students in private and public colleges. The present era is of information technology and usage of smartphone. The study traversed upon analyzing the academic use of smartphone. It may beneficial for the student. This research work also provides a significant contribution to the students in enhancing the knowledge and information. The second contribution of my study examine the academic use of smartphone on the academic achievement in private and public

colleges' students. The study was delimited to: Male students, 2nd year Pre engineering and Smartphone.

It was quantitative research in nature and survey design was used to conduct theresearch. The population of the study was comprised of male students of Sir Syed College and Punjab group of colleges (Satellite Town College). Total number of colleges at Rawalpindi are Public 09 and Private 46. So 2nd year pre engineering students was selected as a population. The sample of the study was comprised of 227 students of public and private colleges at Rawalpindi. One hundred students having maximum marks in 1st year from each college was selected. The questionnaire was including information regarding effectiveness and improvement after and before use of smartphone, questionnaire was based on five rating scale (5-strongly agree to strongly disagree. A well-structured questionnaire was prepared and distributed to the college students of private and public colleges of Rawalpindi for the purpose of data collection. The data were analyzed thought t-test through SPSS (Version 2024). It was quantitative research in nature. Data were analyses by using SPSS Software and Mean, was applied. Proper permission was acquired from concerned. The privacy of research participants was ensured.

5.2 Findings

1. Table 4.1 depicts that (36%) strongly agreed, (50%) agreed, (3%) neutral, (7%) disagreed and (5%) strongly disagreed with the statement that I have a smartphone. The value of mean score (4.06) favoured in the statement. Thus, it is founded that majority (86%) teachers agreed with the statement that I have a smartphone.
2. Table 4.2 depicts that (1%) strongly agreed, (.9%) agreed, (1%) neutral, (46%) disagreed and (51%) strongly disagreed with the statement that I

can use Learning Management System (LMS) [Online Applications] for the presentation of information. The value of mean score (4.43) favoured in the statement. Thus, it is founded that majority (96%) disagreed with the statement that I can use Learning Management System (LMS) [Online Applications] for the presentation of information.

3. Table 4.3 depicts that (2%) strongly agreed, (1%) agreed, (1%) neutral, (49%) agreed and (47%) strongly disagreed with the statement that I can use LMS to answer the questions/queries asked by teachers. The value of mean score (4.38) favoured in the statement. Thus, it is founded that majority (96%) disagreed with the statement that I can use LMS to answer the questions/queries asked by teachers.
4. Table 4.4 depicts that (40%) strongly agreed, (56%) agreed, (1%) neutral, (1%) agreed and (1%) teacher strongly disagreed with the statement that I can create digital documents and notes. The value of mean score (4.31) favoured in the statement. Thus, it is founded that majority (97%) agreed with the statement that I can create digital documents and notes.
5. Table 4.5 depicts that (41%) teachers strongly agreed, (55%) agreed, (1%) neutral, (1%) agreed and (1%) teacher strongly disagreed with the statement that I can attach/send digital document to teachers with no difficulty. The value of mean score (4.33) favoured in the statement. Thus, it is founded that majority (96%) agreed with the statement that I can attach/send digital document to teachers with no difficulty.
6. Table 4.6 depicts that (43%) strongly agreed, (53%) agreed, (1%) neutral, (1%) agreed and (1%) strongly disagreed with the statement that I can efficiently use Zoom or Similar Applications for Online lectures by using

smartphone. The value of mean score (4.35) favoured in the statement. Thus, it is founded that majority (96%) agreed with the statement that I can efficiently use Zoom or Similar Applications for Online lectures by using smartphone.

7. Table 4.7 depicts that (39%) strongly agreed, (59%) agreed, (0%) neutral, (1%) agreed and (1%) strongly disagreed with the statement that I can use online Dictionary for improvement of my English Language on Smartphone. The value of mean score (4.34) favoured in the statement. Thus, it is founded that majority (98%) agreed with the statement that I can use online Dictionary for improvement of my English Language on Smartphone.
8. Table 4.8 depicts that (39%) strongly agreed, (59%) agreed, (0%) neutral, (1%) agreed and (1%) strongly disagreed with the statement that I have good experience of online class than face to face class. The value of mean score (4.34) favoured in the statement. Thus, it is founded that majority (98%) agreed with the statement that I have good experience of online class than face to face class.
9. Table 4.9 depicts that (37%) strongly agreed, (61%) agreed, (0%) neutral, (1%) agreed and (1%) strongly disagreed with the statement that I can upload notes, videos in the portal for the purpose. The value of mean score (4.33) favoured in the statement. Thus, it is founded that majority (98%) agreed with the statement that I can upload notes, videos in the portal for the purpose.
10. Table 4.10 depicts that (43%) strongly agreed, (55%) agreed, (0%) neutral, (2%) agreed and (1%) strongly disagreed with the statement that

I can use WhatsApp for group discussion between students for online teacher-student interaction. The value of mean score (4.37) favoured in the statement. Thus, it is founded that majority (97%) agreed with the statement that I can use WhatsApp for group discussion between students for online teacher-student interaction.

11. Table 4.11 depicts that (35%) strongly agreed, (49%) agreed, (2%) neutral, (8%) agreed and (7%) strongly disagreed with the statement that I can utilize all the Smartphone information easily. The value of mean score (4.01) favoured in the statement. Thus, it is founded that majority (83%) agreed with the statement that I can utilize all the Smartphone information easily.
12. Table 4.13 depicts that (51%) strongly agreed, (47%) agreed, (0%) neutral, (0%) agreed and (2%) strongly disagreed with the statement that I am aware of academic use of smartphone. The value of mean score (4.45) favored in the statement. Thus, it is founded that majority (98%) agreed with the statement that I am aware of academic use of smartphone.
13. Table 4.14 depicts that (48%) strongly disagreed, (50%) disagreed, (0%) neutral, (0%) agreed and (2%) strongly agreed with the statement that I can use Google Meet to create a meeting and share its link. The value of mean score (4.42) favored in the statement. Thus, it is founded that majority (98%) disagreed with the statement that I can use Google Meet to create a meeting and share its link.
14. Table 4.15 depicts that (50%) strongly agreed, (46%) agreed, (0%) neutral, (2%) agreed and (2%) strongly disagreed with the statement that

I can collect information from internet of topics as given in the syllabus. The value of mean score (4.38) favoured in the statement. Thus, it is founded that majority (96%) agreed with the statement that I can collect information from internet of topics as given in the syllabus.

15. Table 4.16 depicts that (48%) strongly agreed, (47%) agreed, (0%) neutral, (1%) agreed and (4%) strongly disagreed with the statement that I can use WhatsApp to send notifications, notes, documents, lectures (audio/video) to the fellows. The value of mean score (4.33) favoured in the statement. Thus, it is founded that majority (95%) agreed with the statement that I can use WhatsApp to send notifications, notes, documents, lectures (audio/video) to the fellows.
16. Table 4.17 depicts that (51%) strongly agreed, (45%) agreed, (0%) neutral, (1%) agreed and (4%) strongly disagreed with the statement that I can transfer files from smart phone to computer. The value of mean score (4.37) favoured in the statement. Thus, it is founded that majority (95%) agreed with the statement that I can transfer files from smart phone to computer.
17. Table 4.18 depicts that (52%) strongly agreed, (45%) agreed, (0%) neutral, (0%) agreed and (4%) strongly disagreed with the statement that I feel that use of Smartphone improve the grades of the students. The value of mean score (4.40) favoured in the statement. Thus, it is founded that majority (96%) agreed with the statement that I feel that use of Smartphone improve the grades of the students.
18. Table 4.19 depicts that (52%) strongly agreed, (45%) agreed, (1%) neutral, (3%) agreed and (1%) strongly disagreed with the statement that

I can use Gmail efficiently for transfer of file and documents. The value of mean score (4.43) favoured in the statement. Thus, it is founded that majority (95%) agreed with the statement that I can use Gmail efficiently for transfer of file and documents.

19. Table 4.20 depicts that (4%) strongly agreed, (4%) agreed, (1%) neutral, (41%) agreed and (51%) strongly disagreed with the statement that I am satisfied with e-learning/online class at collage. The value of mean score (4.41) favoured in the statement. Thus, it is founded that majority (91%) disagreed with the statement that I am satisfied with e-learning/online class at collage.
20. Table 4.21 depicts that (52%) strongly agreed, (44%) agreed, (1%) neutral, (2%) agreed and (2%) strongly disagreed with the statement that I think Smartphone applications help to increase vocabulary in classroom. The value of mean score (4.40) favoured in the statement. Thus, it is founded that majority (95%) agreed with the statement that I think Smartphone applications help to increase vocabulary in classroom.
21. Table 4.22 depicts that (50%) teachers strongly agreed, (46%) agreed, (1%) neutral, (2%) agreed and (2%) teacher strongly disagreed with the statement that Teachers use handmade colorful posters to teach English language. The value of mean score (4.40) favoured in the statement. Thus, it is founded that majority (95%) teachers agreed with the statement that Teachers use handmade colorful posters to teach English language.
22. Table 4.23 depicts that (46%) strongly agreed, (50%) agreed, (1%) neutral, (1%) agreed and (3%) strongly disagreed with the statement that

Smartphone provides extra-large relevant information. The value of mean score (4.34) favoured in the statement. Thus, it is founded that majority (95%) agreed with the statement that Smartphone provides extra-large relevant information.

23. Table 4.29 depicts that (52%) strongly agreed, (41%) agreed, (1%) neutral, (4%) agreed and (3%) strongly disagreed with the statement that I use Smartphone for education. The value of mean score (4.35) favoured in the statement. Thus, it is founded that majority (92%) agreed with the statement that I use Smartphone for education.
24. Table 4.30 depicts that (53%) strongly agreed, (41%) agreed, (1%) neutral, (2%) agreed and (3%) strongly disagreed with the statement that I think Students use Smartphone in the classroom for information. The value of mean score (4.38) favoured in the statement. Thus, it is founded that majority (94%) agreed with the statement that I think Students use Smartphone in the classroom for information.
25. Table 4.31 depicts that (54%) strongly agreed, (40%) agreed, (1%) neutral, (2%) agreed and (4%) strongly disagreed with the statement that I deal with more than one target at a time. The value of mean score (4.38) favoured in the statement. Thus, it is founded that majority (93%) agreed with the statement that I deal with more than one target at a time.
26. Table 4.32 depicts that (54%) strongly agreed, (40%) agreed, (1%) neutral, (2%) agreed and (3%) strongly disagreed with the statement that I can download targeted information easily on Smartphone. The value of mean score (4.37) favoured in the statement. Thus, it is founded that majority (93%) agreed with the statement that I can download targeted

information easily on Smartphone.

27. Table 4.33 depicts that (54%) strongly agreed, (40%) agreed, (1%) neutral, (3%) agreed and (3%) strongly disagreed with the statement that I can transfer files from smart phone to computer. The value of mean score (4.38) favoured in the statement. Thus, it is founded that majority (94%) agreed with the statement that I can transfer files from smart phone to computer.
28. Table 4.34 depicts that (54%) strongly agreed, (38%) agreed, (1%) neutral, (5%) agreed and (3%) strongly disagreed with the statement that I use Smartphone for general information. The value of mean score (4.33) favoured in the statement. Thus, it is founded that majority (91%) agreed with the statement that I use Smartphone for general information.
29. Table 4.35 depicts that (48%) strongly agreed, (46%) agreed, (1%) neutral, (3%) agreed and (2%) strongly disagreed with the statement that Students use Smartphone to verify information in classroom. The value of mean score (4.36) favoured in the statement. Thus, it is founded that majority (94%) agreed with the statement that Students use Smartphone to verify information in classroom.
30. Table 4.36 depicts that (47%) strongly agreed, (46%) agreed, (1%) neutral, (4%) agreed and (3%) strongly disagreed with the statement that I use Smartphone for entertainment. The value of mean score (4.30) favoured in the statement. Thus, it is founded that majority (92%) agreed with the statement that I use Smartphone for entertainment.
31. Table 4.37 depicts that (52%) strongly agreed, (44%) agreed, (1%) neutral, (1%) agreed and (1%) strongly disagreed with the statement that

I concentrate on a single target at a time. The value of mean score (4.45) favoured in the statement. Thus, it is founded that majority (97%) agreed with the statement that I concentrate on a single target at a time.

32. Table 4.38 depicts that (52%) strongly agreed, (45%) agreed, (1%) neutral, (2%) agreed and (1%) strongly disagreed with the statement that Do you use Smartphone to record lectures during lecture. The value of mean score (4.43) favoured in the statement. Thus, it is founded that majority (96%) agreed with the statement that Do you use Smartphone to record lectures during lecture.
33. Table 4.36 depicts that (47%) strongly agreed, (46%) agreed, (1%) neutral, (4%) agreed and (3%) strongly disagreed with the statement that I use Smartphone get material related my study. The value of mean score (4.30) favoured in the statement. Thus, it is founded that majority (92%) agreed with the statement that I use Smartphone get material related my study.

5.3 Discussion

The incredible usefulness of smartphones in learning activities, it tends to results in a negative effect on the distance learning students. This finding supports the study of Kibona and Mgaya (2015) where it was revealed that the use of smartphone for leading negatively affects students in all level because of its addictive nature shifting the focus of students from their studies. Similar findings were also found in the works of Ifeanyi and Chukwuere (2018) and Lee et al., (2015). On the other hand, the study is inconsistent with the study Shai (2016) and Sarfoah (2018) where favourable effect was revealed from the participants.

Secondly, across the reviewed studies, three measures of academic performance are used. Six studies use data on students' actual grades received from the lecturer or from the faculty or university administration. All of these studies conclude a significantly negative association between smartphone use and these outcomes. In addition, 11 studies rely on self-reported grades. Remarkably, all five articles not reporting a negative association fall within these 11 studies. Finally, the six studies using self-reported academic performance scales all found a negative association. This contrast may indicate that errors of measurement occurred in the self-reported grade variables. Indeed, these variables may be biased due to recall issues or socially desirable answering (Krumpal, 2013).

Smart phones gain a significant place among the students and working group. There are many applications freely available online. Such Apps can be easily downloaded and stored on any handy device. This exploratory study has emphasized that students could use smart phones for academic purposes extensively from simple reading, browsing and downloading academic materials. It has wide impact on their academic performance which will boost their interest through class participation, enhancement of learning skills, preparation and submission of assignments on time. Since this study was limited to Business school students, in future different schools or communities may be targeted to investigate the academic use of smart phones or any other new devices which are yet to come.

Alfawareh and Jusoh (2014) studied the use of smartphones among 324 university students of Najran University in Saudi Arabia. Through a questionnaire based survey, findings revealed that 94.4 percent of students owned smart phones, and majority of them used like mobile by using as a computer connected to internet and a digital camera. While attempt was made to study the use of smartphone for learning

purposes, it was found that 91.7 percent of students used smartphones to log on to student portal, 60.9 percent never used for Blackboard access. It is pathetic to note that 66 percent never used their smartphones for taking notes in a classroom, 66.9 percent never used to record class lectures and 46.5 percent has not at all used them for downloading materials related to class.

5.6 Conclusions

1. It is concluded that the majority of respondents agreed with the statement that they have a smartphone, while it was found that the majority disagreed with the statement that they can use the Learning Management System (LMS) [Online Applications] for the presentation of information.
2. It is concluded that the majority disagreed with the statement that they can use Learning Management Systems (LMS) to answer the questions/queries asked by teachers, while the majority agreed with the statement that they can create digital documents and notes.
3. Based on the analysis, it is concluded that the majority of respondents agreed with various statements regarding their proficiency and familiarity with using smartphones and online tools for educational purposes. Firstly, most respondents expressed confidence in their ability to attach/send digital documents to teachers without difficulty, indicating a comfortable grasp of digital communication methods. Additionally, a majority of respondents affirmed their efficiency in using Zoom or similar applications for online lectures through smartphones, suggesting a readiness to engage in remote learning environments. Furthermore, the majority indicated that they utilize online dictionaries for improving their English language skills, highlighting

a proactive approach to self-improvement through digital resources.

4. Moreover, respondents reported having a better experience with online classes compared to face-to-face classes, indicating a preference or adaptability to virtual learning environments. They also expressed confidence in uploading notes and videos to online portals, demonstrating competence in managing digital content for educational purposes. Furthermore, respondents noted their use of WhatsApp for group discussions between students, indicating a familiarity with using social media platforms for academic collaboration and interaction. Additionally, they expressed a comprehensive understanding of utilizing smartphone features and were aware of their academic applications. However, the majority disagreed with the statement regarding their ability to use Google Meet to create a meeting and share its link, suggesting a potential area for improvement or a lack of familiarity with this specific online tool
5. Based on the analysis, it is concluded that the majority of respondents agreed with several statements regarding their use of smartphones and online tools for educational purposes. Firstly, most respondents expressed confidence in their ability to collect information from the internet on topics as given in the syllabus, indicating a reliance on digital resources for academic research and learning. Additionally, a majority of respondents affirmed their use of WhatsApp for sending notifications, notes, documents, and lectures (audio/video) to their peers, demonstrating a preference for digital communication methods for sharing educational content. Furthermore, respondents reported being able to transfer files from their smartphones to computers, indicating proficiency in managing digital files

across devices. Moreover, respondents generally felt that the use of smartphones improves students' grades, suggesting a belief in the positive impact of technology on academic performance. Additionally, respondents expressed efficiency in using Gmail for the transfer of files and documents, highlighting the integration of email services into their digital workflow. Furthermore, the majority reported satisfaction with e-learning/online classes at their institution, indicating a positive reception of digital learning platforms. Moreover, respondents believed that smartphone applications help increase vocabulary in the classroom, reflecting an appreciation for the educational value of mobile apps. However, respondents noted that teachers primarily use handmade colorful posters to teach English language, suggesting a potential gap in the integration of digital resources into teaching practices. Despite this, respondents acknowledged that smartphones provide access to extra-large relevant information and reported using smartphones for educational purposes, indicating a recognition of the vast potential of digital resources for learning. So, the findings reflect a widespread acceptance and utilization of smartphones and digital tools for educational purposes among respondents, while also highlighting areas where further integration of technology into teaching practices may be beneficial.

6. Based on the analysis, it is concluded that the majority of respondents agreed with several statements regarding their use of smartphones, particularly in educational contexts. Firstly, most respondents agreed with the statement that students use smartphones in the classroom for information, indicating a recognition of smartphones as tools for accessing

educational resources. Additionally, the majority of respondents indicated that they deal with more than one target at a time and can download targeted information easily on smartphones, suggesting multitasking abilities and efficient information retrieval skills. Furthermore, respondents reported being able to transfer files from smartphones to computers, indicating proficiency in managing digital files across devices. Moreover, respondents confirmed using smartphones for general information and entertainment purposes, reflecting the versatility of smartphones in meeting various personal needs. Additionally, respondents noted that students use smartphones to verify information in the classroom, indicating a role for smartphones in fact-checking and information verification processes. Furthermore, respondents acknowledged using smartphones to record lectures during lectures, suggesting a recognition of smartphones as tools for capturing and reviewing educational content. However, respondents disagreed with the statement that they concentrate on a single target at a time, indicating a tendency towards multitasking or divided attention. Therefore, the findings highlight the widespread use of smartphones among respondents for educational, informational, and entertainment purposes, as well as their recognition of smartphones as versatile tools for various tasks.

5.5 Recommendations

1. **Recommendations for Optimizing Academic Use of Smartphones**
    i. Develop guidelines outlining acceptable smartphone usage during class hours, emphasizing the importance of minimizing distractions and focusing on educational tasks.
    ii. Encourage the use of educational apps and online resources relevant to

the curriculum to harness smartphones as learning tools.

iii. Implement smartphone-free zones or designated times during lectures to promote uninterrupted learning.

iv. Provide workshops or training sessions for students on effective smartphone management techniques, such as time-blocking and prioritization of tasks.

2. Advocacy for Adoption of Policies and Strategies

i. Engage college leadership in discussions about the benefits of optimizing smartphone use for academic purposes while addressing potential distractions.

ii. Collaborate with faculty members and student representatives to draft and advocate for comprehensive smartphone usage policies that balance academic needs with minimizing disruptions.

iii. Highlight success stories and case studies from institutions that have effectively implemented smartphone policies to garner support for adoption.

3. Evaluation and Modification of Strategies

i. Establish regular assessments or surveys to evaluate the effectiveness of implemented policies and interventions.

ii. Solicit feedback from students, faculty, and staff regarding the impact of smartphone policies on learning environments.

iii. Modify strategies based on feedback and evolving technology trends to ensure relevance and effectiveness.

4. Strategies for Educators to Integrate Smartphones

i. Incorporate interactive smartphone activities into lesson plans, such as real-time polling or collaborative note-taking using digital platforms.

ii. Provide guidelines for using smartphones as research tools, including evaluating sources and citing information properly.

iii. Encourage students to share educational content or resources they find on smartphones with the class to promote peer learning and engagement.

5. Engagement of Stakeholders

i. Organize forums or town hall meetings involving college administrations, educators, students, and parents to discuss the benefits and challenges of smartphone integration in education.

ii. Present evidence-based research and case studies demonstrating the positive impact of optimized smartphone use on learning outcomes.

iii. Encourage open dialogue and collaboration among stakeholders to develop consensus on best practices for smartphone usage in educational settings.

6. Recommendations for Educators

i. Provide training sessions for educators on effective strategies for integrating smartphones into pedagogical approaches.

ii. Emphasize the importance of clear communication and setting expectations regarding smartphone usage in the classroom.

iii. Offer support and resources for educators to explore innovative teaching methods that leverage smartphone technology to enhance student engagement and learning outcomes.

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