EFFECT OF TECHNOLOGICAL MEDIATED COMMUNICATION ON FACE TO FACE COMMUNICATION

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The research was conducted to investigate the effect of technology and (TMC) on FTF communication. A survey research was carried out, using questionnaire as a data collection tool to get information about owning devices and time spent on technological mediated communication and their effect on face to face communication. Simple random sampling technique used in the research and sample size (394) drawn from the "Taro Yamane" and respondents were the students of the different departments of the University of the Punjab. Descriptive statistics was applied to check the frequency and percentage of the questions. Linear regression bivariate analysis was run to test the hypothesis. The findings of the present study indicated that a majority of students own devices like mobile phones, computer and laptops but it didn't affected the lives of the individuals to a large extent negatively in terms of face to face communication but time spent on technological mediated communication has negative effect on face to face communication.

Key words: *Face to Face (FTF), Technological mediated communication (TMC)*

Introduction

In the technological and scientific era, the advancement in technology has been increasing since its invention and use of technology with the passage of time kept growing with all of its manifest and latent consequences. Some of the manifest functions of technology are to reduce the burden of human being. If we talk about the communication technology, it is far clearer that it serves to bring people nearer and lessen the distances. However, there are some unintended consequences of communication technology which really need to be studied because it is important for us to know that how does a phenomenon affect our lives such as increase in the wireless communication has brought about many changes; both positive and negative (Geser & Hans, 2003).

In previous times, people were used to convey their messages mostly in written forms (e.g. Letters), long-distance telephone calls, travels and verbal communications took places but now-a-days the change and advancement in communication technology has totally diverted the way we maintain and support our relationships. The use of cellular

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phones, iPad and tablets have made it easy to communicate at anytime, anywhere without being concerned of distances and have made our relationships more valuable. Furthermore, there is a need to understand the effects of communication technology on face-to-face communication.

Technological mediated communication (TMC) is free of the physical presence of the individuals and is more dependent upon the focus and attention of the persons involved. Almost every individual now-a-days is having gadgets with them so the interference of these gadgets in our lives in inevitable show and these gadgets are taking place in our lives more forcefully than the face-to-face (FTF) communication (Palen, 2002). Over time, due to these technological mediated communications, the reduction of the quality in relationships weakens the social ties (Emmers-Sommer, 2004). Technological mediated communication lowers the quality of communication/ relationships due to the processes involved within this, for example the friendship taking place on social networking sites has no quality. The highlighted differences between face-to-face and technological mediated communication are worthy of attention, and lie in the basis of this research.

In order to better understand these differences in communication between face-to-face and technological mediated communication and their effects on quality of face-to-face communication.

Research Problem

Pakistan is quickly catching up the adaptation of technology. There is a lot of discussion among sociologists on the excessive use of technology and how the communication technology lessens the face-to-face communication. The main factor of growing technology in Pakistan is the youth bulge because the total population of Pakistan consists of 60-64% of youth. Youth gets attracted toward the devices and they are using in great manner.

Due to the higher ratio of youth in Pakistan, the development is totally dependent on the performance of youth and the good performance can only be done when an individual is psychologically and emotionally well and stable show. The increasing use of technology may affect the individual either positively or negatively. The basic issue that is being highlighted now-a-days the communication gap due to increase time spent on devices. Youth is more interested in interacting with other through technological mediated devices rather than face-to-face (FTF)

communication. Consequently, this lack of face-to-face interaction may lead to the feeling of loneliness and emotional and psychological instability.

The current study highlights the attraction, frequency and intensity of usage of technological devices among the youth generation of Pakistan and their consequences on face-to-face communication of the individuals

Sociological Significance

Due to rapid increase in technology, there is a great impact on basic foundation of society (Cheal & David, 2002). Technology has a great effect on the society. The dynamics of the society in every aspect has reformed due to the advancement in the technology. Every society has its own culture. Culture is a mixture of symbols, value and norms and now-a-days these aspects of culture reshaped by great influence of technology and there is change in pattern of the communication and socialization. Being a sociologist it is very important to highlight the major issues of the society, how they are shifting from the Face-to-Face (FTF) communication to the technological mediated communication (TMC).

Research Questions

*   What are the effects of technological mediated communication (TMC) on face-to-face (FTF) communication?

Objective of Research

*   To examine the effect of technological mediated communication (TMC) on the face-to-face (F-T-F) communication.

Hypothesis

H1: There is a relationship between the technological mediated communication and face to face communication

Literature Review

Technology is referred as the system that is consist of technological process, "technological objects" (devices, equipments) "technological knowledge", "developers of technological objects", "users of technological objects", and the worldview (Eric & Moody, 2001). The new means of communication e.g. mobile phones, computers, Ipads, text messaging and social networking sites have enabled people to maintain their relationships and to interact with others despite of the increased distances. But these interactions are delicate and assorted. The Research on the impact of communication technologies shows that

they can increase the strength of friendship connections in rather particular ways (Harper et al., 2013). The occurrence of phone calls becomes less frequent as distance increases, though they are of longer duration; but phones are important in maintaining friendships, especially strong ones, regardless of the frequency or ease with which face-to-face meetings can occur.

The internet is the most recent technology to affect the process of interaction. Early studies, in the 1990s, used rather simple measures that suggested that the more time people spent on the internet, the weaker intimate relations they had, because spending time on the internet was treated as an alternative to investing time in interaction. This led to the formulation of the so-called 'internet paradox', the inverse relationship between time spent on the internet and face-to-face interaction. However, social networking technologies were then less advanced and less widely used than they are today and the communication functions of social media are usually more popular among adolescents (Greenfield, 2008).

Due to advancement in technology there is shift in form of social interaction and communication.

A Shift from Face-to-Face (FTF) Communication to Technological Mediated Communication (TMC)

Communication is an "essential practice of human activity (Castells et al., 2006). Communication can refer as "the sharing of anything between two or more arbitrary entities" (Arndt & Carolin, 2011) for the survival of the human being in a society, "interaction" and "communication" is an essential. Humans communicate to exchange information in every day at every culture. The word communication derived from the Latin word "communis," meaning "to share," (Brown, 2013). The last few decades it is widely observed that there is a significant change in human interaction due to the advancement in the technology and specially in "Information technology" people are communicating through email, texting, social networking (Facebook), instant messaging (Whatsapp, messenger, mobile phones and viber) instead of face-to-face communication (Brown, 2013). There is an increase of use of internet from "16" million to "2280" million worldwide (Stats, 2012) . In the late 2000s there is drastic increase in the usage of cell phone and social media (Drago, 2015) as results have shown that significant numbers of teens own a cell phone (77%), whereas majority of them (63%) use cell phone for text messaging daily (Dokoupil, 2012).

The advancements in communication technology, enabled to connect people on large scale more easily with people that shrinking the long distance but they know little about each other so, it is important to explore how the frequent presence of these devices in social settings influences face-to-face communication (Przybylski & Weinstein, 2012). Due to drastic increase in use of technology especially in young generations decrease the face-to- face communication (ages from 8 to 18) and they spent more of their time on the technological mediated communication rather than face-to-face communication (Rideout et al., 2010).

Technological Mediated Communication (TMC) and Face-to-Face Communication (FTF)

FTF can refer as "face-to-face communication". The FTF communication refers as "the private mode of communication" in which the persons can directly react to the gestures, facial expressions, eye contact, verbal and non verbal communication (Arndt & Carolin, 2011). According to Berko definition of FTF communication "it is a form of interpersonal communication (being part of human communication) that takes place between two or more persons who establish a communicative relationship" (Berko, 2007). Face-to-face communication can also defines as "multichannel experience" which means that individuals can simultaneously can respond to multiple channels and "the channels of face-to-face communication" can define as the "sensory organs" (Tubbs & Moss, 2003). Interpersonal communication is a basic unit of the FTF communication. FTF communication can be defined as the "real world" communication in which the physical presence of the person is necessary.

TMC refers as technological mediated communication it may include telecommunication, communication through internet, computer mediated communication. All those ways through we can communicate without physically presence is known as technological communication like IM (instant messaging), email (electronic mail), internet, social networking (Facebook, twitter) mobiles (Brown, 2013). Due to rapid growth of technology it has increased telecommunication in which spatial proximity is not required (Brown, 2013). Computer mediated communication —defined as ''any communication patterns mediated by a computer" (Metz, 1994).

Due to decrease in face to face communication there is the many impact on individuals in term of quality, they feel loneliness and many other some researches that are the evident of this. Social and

behavioral scientists identify the indicators of psychological well being as loneliness, depression, social support, self esteem and social skills which concludes that technological mediated communication is negatively associated with psychological well being (Cotten, 2008). Previous studies have shown that the more time people spend in FTF interaction they will have low levels of social and emotional loneliness, and more time they will spend in TMC they will have high level emotional and social loneliness (Eric & Moody, 2001). The more time people spend on using technological mediated devices like mobile, tablets and ipad they will have affects negatively on the quality and quantity of the FTF communication (Drago, 2015). The extensive use of mobile in social settings, it showed that there is a negative effect on the quality of the FTF communication, specifically when individuals are engaged in meaningful topics (Przybylski & Weinstein, 2012)

Computer mediated communication (CMC)" has many social disadvantages like highly developed and positive personal relationships should occur rarely in on-line settings" like in face- to-face (FTF) communication people express more agreement or view points than the computers mediated communication and due to advancement in technology the face- to- face (FTF) interaction is decreasing (Kiesler & Sproull, 1992). Due to decrease in face-to-face interaction the younger generation is facing "significant consequences for their development of social skills and their presentation of self" (Brignall & Van Valey, 2005, p. 337). As researches indicate that due to increase use of TMC it has lessened the FTF communication that is causing lack of eye contact and body language, which are pivotal components of human interaction and there is a chance youths will lose the skills essential to produce empathy (Greenfield, 2012).

RESEARCH METHODOLOGY

A quantitative research was designed to conduct the current research. University of the Punjab was selected as research population for the current study because this university considered to as the largest university and students came from diverse background. After specifying the population, the next step for researcher is to select the sample size. Sample size was determined by the "Taro Yamane" formula.

$$n = \frac{N}{1+N(e)^2} \quad \Rightarrow \quad \frac{24000}{1+24000(0.05)^2} = 393$$

Students of Different department were selected as the sample of the current study. The sampling technique was "Simple Random". Survey technique was used for data collection and to do quantitative research. The tool used for data collection is the self-administered questionnaires. This is used to measure the frequency of usage of technological devices, effects of technological mediated communication. The questionnaire consisted of three parts. First part is Demographic part (Gender and highest completed level of education), second part consists of multiple questions that asking what kind of devices they use to communicate and third part consist of question asking how technological mediated communication has effect on face-to-face interaction It consisted of 12 questions consisted on close-ended questions except demographic questions. The scale used in the second part of the questionnaire was the Nominal Scale till question no.7. The rest of the parts of the questionnaire were consisted of 5 point Likert Scale (see appendix A). The average time taken by Respondent was 10 minutes to fill the questionnaire. 394 students were surveyed for the current study.

The data entered in SPSS version 21.0 Windows. The questions asked from the respondent was categorized and coded before the data entry. To analyze the frequency of devices usage, time spent on technological mediated devices and "Frequency" measure through descriptive statistics used by the researchers. Procedure as follow in SPSS to run the frequency univariate analysis:

Analyze ➔ descriptive statistics ➔ Frequency

The Linear regression test will be applied to test the hypothesis. Linear regression used to verify the relationship between the variables and also shows the strength of the relationship. Procedure as follow in SPSS to run the linear regression bivariate analysis:

Analyze ➔ Regression ➔ Linear

The confidence interval in the social sciences is 95 % hence the alpha value taken by the researcher is 0.05.

Findings

The finding of self administered questionnaire reveals the frequency of owning technological devices among different students of University of the Punjab. The researchers wanted to explore the effect of way technological mediated communication (TMC) lessens the face-to-face (FTF) communication.

Descriptive Statistics

In the provided section, descriptive statistics, the frequency of variables on the basis of questions is tested to find the frequency of owning devices, usage of technological devices and usage of social networking sites, interaction of individuals.

Table showing Percentage showing Owning devices/Access to Internet

This table shows that how many students own devices and having access to the internet and also illustrate of having an account on the social networking sites (SNS). The results show that majority of the students own computer, having access to the internet and they have their account on the social networking sites there were very few students who do not own computer and not having a access to the internet.

Table showing Percentage of Spent Time in hour on Devices/SNS and TMC on daily basis

Time spent on Devices /TMC	More than 9	7-8	5-6	3-4	1-2	30 (mints)	not at all
No **Owning devices**						**Yes (%)**	**No (%)**
IM 1 Owning computer	08	05	08	16	29	26 97	08 03
Cell Phone (text message) 2 Internet access on computer	08	03	06	13	24	38 94	08 06
Cell phone (calls, talking only) 3 Wireless Internet connection	03	02	04	08	15	48 90	20 10
4 Facebook Owing smart phone	06	05	10	18	24	30 99	07 01
5 Email Usage of text messaging	03	02	01	05	09	56 9	24 03
6 Internet access on cell phone						97	03
7 social networking account						98	02

The data results derive for students' show that the average time spends on internet for communication is 1-2 hours per day. While the percentage of students who never used Email for communication is very low.

Table showing Percentage of preferable mode for communication (Face-to-Face communication)

Face-to- Face Communication	Never	Rarely	often	Most of the	All the

				time	time
I am more comfortable show in interacting with others through TMC rather than FTF	24	30	23	19	04
I prefer text messaging for communication	12	25	30	25	08
I prefer talking with others on cell phones instead of talking to them FTF	27	39	18	14	02
I prefer talking with others on the computer instead of talking to them FTF	36	33	18	11	02

This table is based on the frequency of usage of technological devices for communication or the preference of being face-to-face. The highest frequency (36) in the table show with respect to the computer usage and the lowest frequency (04) with respect to the interaction through technological mediated communication shows that the individuals do not prefer technology for communication and they really prefer and prioritize being physically present to communicate with friends, family members and the other people with whom they interact on daily basis.

Hypothesis testing

Table showing 1.4 Relationship between owing devices and Face-to-Face Communication

Sig_value (P)	0.586
Correlation coefficient (R)	0.028
Coefficient determination (R^2)	0.001

Table shows that there is no relationship between available sources of communication and preferable mode of communication as the P- value (0.586) > α-value (0.05)and the correlation coefficient determine that there is no relationship (0.028) and coefficient determination shows that the effect of available sources of communication is very low on the preferable mode of communication (0.1%). Therefore, the generated null hypothesis is rejected. So, we can conclude that people still prefer face to face communication rather than the technological mediated communication. This may be due to the physical presence of a person where he/she able to express their thoughts and ideas clearer through gestures, facial expressions and tone.

Table showing 1.5 Relationship between Time spent on devices/TMC and preferable mode for communication

Sig_value (P)	0.000

Correlation coefficient (R)	0.176
Coefficient determination (R^2)	0.031

Table shows that there is a relationship between time spent on devices/ preference for technological mediated communication and preferable mode of communication as the P- value (0.000) < α-value (0.05) and the correlation coefficient determine that there is a relationship (0.176) and coefficient determination shows that there is a effect of time spent on devices/ preference for technological mediated communication on the preferable mode of communication (31%). Therefore, the generated hypothesis is accepted. It is concluded that if students spent more time on technological mediated communication it will affect the face to face communication.

Discussion

The previous studies are the evident that rapid expansion of technology is negatively affecting FTF communication; as people feel comfortable in communicating with their friends and family member through TMC rather than FTF but at the same time large number of people feels the quality of their conversations ruin in the presence of technology (Drago, 2015). Previous literature indicate that Increase in the usage of technology has negatively effects the individual's psychological well being. They feel more loneliness and isolated.

The objective of the current study is to explore the effect of technological mediated communication (TMC) on the face-to-face (F-T-F) communication. The related hypothesis ($H0_1$) is "there is a relationship between the technological mediated communication and face-to-face communication". effect on face to face communication was checked in two dimension; first one was how owning device will on face to face communication?, and second one was how time spent on technological mediated communication effects face to face communication? Unfortunately, the finding from the collected data doesn't support this hypothesis "there is no relationship between owning device and Face-to-face communication" there is no association between the variables and they still prefer the Face-to-face communication. Generally, it is seen that the youth is getting involved in technological devices and social networking sites more than the ever, and respectively face-to-face communication should have decreased but, surprisingly the results are opposite. Our youth, anyhow, still prefers a physical face-to-face communication to stay in

touch with each other. They may take face-to-face communication as more convenient and easy to convey their message, thoughts, feelings, emotions and expressions as compared to the technological mediated communication. As the study is conducted the objective is accomplished in order to understand the effect of communication on face-to-face interaction.

The second dimension of the hypothesis is "there is relationship time spent on technological mediated communication effects face to face communication" results reveled that there is a relationship between time spent on technological mediated communication effects face to face communication. The more time people spent on technological mediated communication there is a decrease in face to face communication.

Conclusion

The topic of the conducted research is "Effect of technological mediated communication on face to face communication (A shift from face-to   face   communication   to   technological   mediated communication)" practiced through close-ended questionnaires filled by 394 respondents with the help of Simple Random Sampling technique. The effect of technology on FTF communication is analyzed in the current study. The variables included owning the devices and time spent on technological devices. The outcomes revealed that there is no doubt, some conditions and circumstances on which technology has effects upon individuals. Surprisingly results show that individuals are not that much affected by the misuses of technology and they still prefer to communicate with their loved ones and intimates by a face-to-face interaction. They use technological devices and social networking sites for entertainment, information and interaction yet they never found themselves in such a psychological state where they find no one to communicate with or to share their feelings. The importance and the effects of technology on the social and psychological state of individuals in their different roles in group and family life are discussed throughout the study. However, both positive and negative effects are revealed by many researches and on the basis of the researches, the conclusion is drawn in the current study. The hypothesis was drawn on the basis of the literature review. Hypothesis is put into test for the analysis of the results in order to relate those analyses with the literature review findings. The hypothesis was further divided in two dimension one dimension showed that there is no effect on face to face communication but one

dimension (time spent) showed that there is a effect on face to face communication.

Bringing to a close, we can draw the inferences that technology has both positive and negative effects on university students, but the only thing which matters is the way we use technology, the frequency we use it with and the intentions we have while using the technology.

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