

## ARTICLE

## ANALYSIS OF POSITIVE IMPACT OF LOCKDOWN ON SKILLS ACQUISITION USING ONLINE COLLABORATION TOOLS

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## ABSTRACT

In recent days, COVID-19 has affected economical, psychological, and societal parameters. During Lockdown, People were forced to stay at home for a long period as never before. During this scenario, the only medium to communicate with each other was virtual platforms such as collaborating apps /tool etc. Apart from leisure activities, people have utilized this time to enhance their existing skills either willingly or forcefully. The focus of the present paper is to analyze the positive impact of Lockdown on the common people in terms of their skills enhancement. A survey was conducted in the NCR region where Lockdown was strictly imposed. Percentage analysis and Chi-Square test were employed to analyze the data. In the paper, willingness to learn new tools, types of skills learnt, selection of a tool and most used feature of a tool have been described on the basis of statistical results. The findings have statistically proven that people have learnt new technology via using new tools. Furthermore, statistical tests were employed to gain insight about association of selection of tools with gender and job status. No significant association was found among gender and selection of tools. In contrast, a significant association was found between selection of collaboration tools and respondents' job status. Observations on how common people have utilized their time to learn new skills-be it a technical or non-technical have been discussed thoroughly to achieve the objectives of study.

## INTRODUCTION

COVID-19 took over the world as a pandemic with devastating effect which no government and citizens had ever thought off [1]. Among four lockdowns in India, the first two were more strictly imposed and common people were not allowed to even move out of the houses [2]. People were forced to stay at home and handle all their household and official activities from their places [3]. They had opted different modes of communicating and collaborating with each other in which technology and collaborating tools have played a vital role [4]. Lockdown was the time when people have thought about highly creative ways to spend their free time. Every person whether willingly, unwillingly or under professional pressure had to learn, whatever was required to survive in their jobs [5]. Skill development without much investment was introduced by many online e- learning platforms. There is a huge impact of COVID 19 on education, 1.2 billion of students globally are no more in the classrooms but are either learning through e-learning mode or in virtual classes with their teachers who are sitting in remote [6,7]. This way of teaching may stay post pandemic also making a shift in the education industry. The surge in software and related platforms shows the quick drift of teaching methodology. Globally it has witnessed a large "Online Movement" in the education industry [9]. UNESCO Institute in Education's reveals that we need to come together not only to address the immediate educational consequences of this unprecedented crisis, but to build up the longer-term resilience of education systems [12]. As rightly said that busy minds will be more pertinent in bearing and sailing through this tough time. More we engage the population in learning mode, whether it is related to technology, self-grooming, physical fitness, home related activities, the less they are inclined towards boredom and anxiety. Free access to such courses and specialization courses has helped a common person to avail knowledge easily [10]. Many organizations have come forward for the students to help them and the society in keeping up the pace with the time, in spite of the odds of pandemic COVID 19 [14,15]. The major loss during COVID 19 is loss of lives because of this pandemic and much worse is what is being faced by old couples [8]. These old people are living in solitude but Impact of technology can surely be seen in the lives of old people as well because they have now learnt new technology as a necessity - may be for digital payment, online banking or asking Siri or an apple phone, Google Home about the home remedy or getting a solution of a problem. They have learnt using video conferencing calls to reach their family members [11]. A report says that nearly two out of every three of the 3.81 billion active social media users are Facebook users, next in line are YouTube, Instagram, WhatsApp, and Twitter [16]. In all these methods of reaching remote people - collaborative tools have definitely played an important role with unique features. As per the comparative study on various collaborating tools - among Zoom, Google Meet, Microsoft Teams, WebEx Meetings and Blue Jeans are the top five popular apps/tools for virtual meetings which are priced differently, user interactivity etc. The collaboration app: Microsoft Teams, has given a tough competition to skype for its more flexible and advanced features [15]. Besides the pressure to learn the technology for professional fitness (work from home); common people have also switched from normal WhatsApp calling to video conference calls, messengers, unused options of social media platforms etc. [12]. The need for finely tuned social and emotional skills have also rapidly grown as this pandemic has also brought cognition problems like uncertainty, psychological pressure, social distancing, lockdown and behavioral issues like precautionary behavior, economic behavior and Nudging behavior [13]. Accompanying the adoption of advanced technologies into the workplace has generated demand for workers with finely tuned social, emotional skills and technical skills. Emotional issues like stress, coping, public trust, isolation, job insecurity, family health, work - life balance have taken a strong toll on everybody's thinking [17, 18]. Developing countries like India, which has huge potential to become the global hub of talented and skilled people, got a chance during this lockdown to enhance and empower

## KEY WORDS

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Collaboration Tools,  
COVID -19, Lockdown,  
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their skill set through various online portals which are coming a step ahead to help them either free or at subsidized rate [10]. Thus lockdown period has come as a learning period for a common man and help them in disguise in their skill enhancement.

**Purpose of the study**

The aim of the study is to examine the positive impact of changed environment due to COVID-19 lockdown on common people in terms of their skills enhancement by using different collaboration tools. The study is proposed to assess types of skills learnt, selection of collaboration tool, most frequent used feature of tools, on the basis of gender and status of employment.

**MATERIALS AND METHODS**

This study revolves around the respondents of NCR region. To collect the data, a 20-item structured questionnaire (refer web link) was constructed on the basis of secondary data available (Websites, News agencies, Blogs, discussion, webinars, research papers etc.). The questionnaire contains a combination of questions like dichotomous, open and closed ended, five -point Likert scale to make it a strong tool. This structured questionnaire (Google form) was e-mailed to 200 NCR residents. Out of which only 153 respondents have submitted their responses, out of which, 151 fully completed questionnaires in all sense were utilized for analysis of the data. Telephonic interviews were also conducted to gain depth knowledge and insights about the response's selection. Respondents were made assured about data privacy and usage for research purposes. Percentage analysis, Chi-Square test and correlation analysis were employed to examine the data Respondents were chosen from different demographic backgrounds, different profiles (working, non-working), different age groups (kids, teenage, adults and old), skill set (technical, semi technical, and non-technical), areas (rural and urban) and were assured for utilizing their personal information only for research purpose and maintaining secrecy of the data. The responses were analyzed thoroughly on different parameters. Furthermore, a reliability analysis was performed to test the reliability of the scale. For this purpose, Cronbach's alpha coefficients were calculated as 0.727 which is above the criteria of 0.60 and considered acceptable as an indication of scale reliability. The statistical tool SPSS Ver 21.0 has been used to convert the primary data into information. Data has been analyzed descriptively by using pie charts and crosstab frequency table. For Inferential analysis, statistical test such as chi-square test and spearman correlation mean between variables was calculated.

**RESULTS**

To analyze the drift towards learning of new skills by using technology, results of the present study have been examined on the three basis - Types of skills learnt by respondents, Selection of collaboration tools, Most frequent used feature of tools. The findings are analyzed descriptively, and inferences have been made using statistical test:

**Willingness of learning of new tools**

To understand the overall responses for question statement on willingness to learning of new technology during lockdown and their expertise on handling new tools and technology, results are presented through pie charts in the [Fig.1].



**Fig. 1:** Respondent's Responses

As per the [Fig.1 a], the study reveals that 72.8 % have agreed upon that they had learnt usage of new communication tools during lockdown whereas 18.5 % have agreed upon that they didn't try new communication tools in the period of lockdown while 8.5% respondents are not sure about their learning of new skills in the lockdown. Thus, it can be observed that a large number of respondents have tried to explore new communication tools and gradually adapted and learnt to operate it comfortably.

Respondents' either learnt new tools willingly or might be forced to operate new tools and gradually learnt it. Few more observation has been highlighted on the basis of these observations – respondents have agreed upon that they were a little afraid of technology earlier and hesitated in using new features of existing technology/tool or opting a completely new advanced tool. But as a necessity when they tried new methods, soon became comfortable using new collaboration tool, now they are less afraid of technology. [Fig.1 b] represents that (80.1%) respondents have accepted that they are no more afraid of technology now, whereas 11.9% respondents said that they are still not comfortable with technology and (7.9%) were not sure about this answer. Such a good percentage of positive response towards not getting afraid of technology also supports the claim of the present study that common people have utilized their lockdown time period in exploring and learning new technology and tools

### Types of skills learnt

The prime aim of this research paper is to understand the types of skills learnt by common people who belong to different age groups, gender, educational background, working profiles etc. and to explore the impact of gender and status of employment on the respondent's selection of a particular collaboration tools. The complete percentage analysis of skills learnt on the basis of Gender and Employment Status has been analyzed and presented further. The results propose that some people have enhanced their previously existing skill sets such as- technical and programming skills which were the requirements of their profession but it is surprising to know that many people learnt few new skills which may be their passion earlier and due to lacking of time, they didn't pursue them. Therefore, present study shows that this lockdown period has provided an opportunity to people for fulfillment of their hobbies and passions and of course the professional requirements. To have in depth examination of types of skills learnt by respondents, a detailed analysis by using crosstab on the statistical tool SPSS (VER 21.0) has been presented in the [Table 1]. The observations are bifurcated on the basis of respondent's gender and respondent's status of employment. It has been observed that males have given highest responses to the option of new technology and using new tools (25%) and then to learning new programming skills (22.6%) whereas female have given highest weightage to enhanced education (20.0%) and after opting enhancing education, they opt for refining communication skills (16.3%) and New technology and using new tools (16.3%). Furthermore, observations have been analyzed the basis of status of employment, we observe that working people have chosen new technology and new tools (21.6%) to learn and get adapted with the new technology. The next highest rated skills by working people was learning and enhancing their education (21.3%). Such results also support the information that many digital learning platforms have offered extremely attractive discounts and offered free courses on almost all fields. This shows that people have very well utilized their time and discounted offers to enhance their knowledge in which collaboration tools have played an important role. The study also reveals that respondents has given more weightage to the – learning Digital Payment (38.5%) which reflects that due to Lockdown, digital mode of purchasing and selling forced common people to learn new ways of making digital payments. Respondents have also shown a trend to learn communication skills (26.6%) and personal grooming skills (33.3%) which might be a bane in their career growth earlier.

**Table 1:** Percentage analysis of skills learnt on the basis of gender and employment status

What have you learnt during Lockdown* Cross tabulation									
		Skills Related to Household Activities	Using New Technology and Tools	Digital Payments	Communication Skills	Personal Grooming Skills	Enhanced Education	Programming Language	Total
Gender	M	5.30%	25%	14.60%	4%	9.30%	19%	22.60%	75
	F	13.20%	16.30%	13.20%	16.30%	7.90%	20.00%	13.10%	76
Total		18.50%	41.30%	27.80%	20.30%	17.20%	39.50%	35.70%	151
Job Status	Working	5.20%	21.60%	16.80%	10.40%	11.70%	21.30%	12.90%	77
	Non-Working	8.10%	19.90%	21.70%	16.20%	21.60%	6.80%	3.10%	74
Total		13.30%	41.50%	38.50%	26.6%	33.30%	28.10%	16.00%	151

Many professional agencies conducted grooming classes and communication enrichment classes and promoted it as well. It captured the common people mindset to improve their communication by utilization free time which they had due to complete lockdown. People who seemed incredibly happy by just posting videos, images and normal chats on WhatsApp suddenly felt the need of seeing their loved ones on video calling of WhatsApp initially singularly and then video conferencing with multiple family members together. The office conference room which was functioning well with just a projector and presentation, during lockdown felt the need to have all its members onboard on the same platform of Microsoft teams sharing their videos, their ideas and carry forward any discussion. As there was no diversion of focus due to a fixed lifestyle during lockdown, people have had much time to utilize it. One of the another skills which is learnt by a good percentage of respondent's is programming languages (15.9 %), these are those people who either by curiosity learnt new programming skills or it was a necessity of their career. This can be observed with positive aspects that in such a terrific environment along with the concern about health and hygiene, bend towards learning new skills by common people is a positive impact of Lockdown. Among all the kind of skills included in the questionnaire, respondents have given maximum responses to new technology and tools (41.3%) and (41.5%) on the basis of gender and employment status respectively

which shows that this lockdown time has been optimally utilized by people to become technology - friendly and more comfortable in intermingling technology with their daily base utilities, which is a good sign to support digitization - future of India. In the 21st century, where everything is going to be digitized and technology is going to supervise human being – this is a good initiative which reflect growth of Indian citizens towards digitization Thus we can have another view to see lockdown in reference to positive impact on society - time for themselves, insight to learn something new for own self.

### Most common tool used/learnt

As during the lockdown, the only way to communicate was technology and collaboration tools. Before this period, generally Tele communication modes were utilized mainly for reaching each other but during lockdown, requirement of reaching to large group of people at one time forced people to go beyond traditional methods. They explored and tried different platforms to reach and communicate a greater number of people together. Before COVID- 19, people knew only two three methods such as – various features of mobile phones, landlines, WhatsApp calling etc. During lockdown, people were forced to explore new options available for their communication methods, new tools etc. People learnt and understood its working and gradually became comfortable in handling this new way of living. By this way, they became familiar with either new options in an old tools or switched to a new tool with more advanced options. In the present study, respondents were asked to tell about the specific tools which they did use more during the Lockdown period. Authors have included tools in the questionnaire such as - Zoom, Microsoft Teams, Skype, WebEx, Hangouts, any educational websites, Google Meet, WhatsApp etc. Data were analyzed to further know about choices of respondents to use these tools for their official or individual learning purposes. This analyzed data has been represented in the [Table 2] on the basis of respondents' gender and Table 3] on the basis of respondent's status of employment. Data Analysis proposes that amongst the given options, male respondents have been utilizing the Microsoft teams (22.6%) as the most used communication tool during lockdown period which was earlier not even known by many common people as it was the communication platform for corporate (especially IT segments) only. It has been mainly used by either working people or by student's community because of its more formal features in it such as - creating teams, creating channels, adding members, conducting and recording meetings in a more advanced manner with features of audio and video facilities and screen sharing options. Secondly male respondents' have used Zoom (20%) and What App (20%). Whereas Female has rated ZOOM platform (36.8%) as the most frequent used collaboration tool and second place was given to MS Team (22.4%). This might be different as per the types of skills learnt by female respondents' and other requirements. Though Zoom is also an official communication tool, it is very widely used by professional bodies to conduct webinars, grooming classes etc. Because of its very generalized feature and easy link generation of any scheduled meeting, it is used by people by just clicking the link after downloading zoom on their devices. Many people revealed that they used Zoom tool for attending webinars on life skills, grooming classes arranged by professional agencies very frequently during the lockdown. Further, to check the significance of association between the selection of collaboration tool and respondent's gender, Chi- square test has been implied. The [Table 2] shows the Sig (2 tailed) value of the Chi Square test which is greater than 0.05, (0.147 > 05), Thus, we can conclude that there is no significant relationship between selection of tool and the gender as (p value > 0.05) at 5 % level of significance; which indicates that there is no statistical evidence which can prove that male and female have chosen different communication tools as per their gender. Thus, the present study does not claim to support the significance of association between gender and selection of a particular collaboration tool.

**Table 2:** Most Used tools by respondents on the basis of gender

		Which Communication Tool You Used Most						Total	Pearson Chi-Square (Asymp. Sig. 2-sided)
		Microsoft Team	Zoom	Skype	Webex	WhatsApp	Google Meet		
Gender	M	22.6%	20 %	9.3%	13.3%	20 %	14.6%	75	.147
	F	22.4%	36.8%	7.9%	11.8%	11.8%	9.2%		
Total		20.5%	28.5%	8.6%	12.6%	15.9%	13.9%	151	

**Table 3:** Most used tools by respondents on the basis of status of employment

		Which Communication Tool You Used Most						Total	Pearson Chi-Square (Asymp. Sig. 2-sided)
		Microsoft Team	Zoom	Skype	Webex	WhatsApp	Google Meet		
Job Status	Working	29.9%	20.8%	11.7%	15.6%	16.9%	5.2%	77	0.01
	Non Working	10.8%	36.4%	5.4%	9.5%	20.9%	16.9%		
Total		20.5%	28.5%	8.6%	12.6%	15.9%	13.9%	151	

Data Analysis on the basis of respondents' status of employment [Table 3] reveals that working people again given highest weightage to MS Team (29.9%) and to Zoom (20.8 %). This might be due to as these two tool offers many advanced features to fulfill professional requirements – be it virtual meeting portals, or more advanced application for mass training, conferences etc. Apart from this, Non- working respondents' have given highest weightage to Zoom (36.4%). The more usage of Zoom may be due to increase in number of virtual classes for kids by schools. Initially almost all these virtual classes were

conducted on zoom later on schools have been switched to Google Meet and other modes of virtual classes. Next percentage was given to WhatsApp (20.9%) for non-working respondents' and (16.9%) for working respondents' During lockdown, respondents have agreed that they found what App a very user-friendly App for and they have used its different features such as - Video calling, conference video calling etc. All age groups respondents' have used it because of its easy handling and mobile based software. Though google has added feature of Google meet later but still (16.9%) non- working respondents' opted for Google Meet as well. Thus based on overall analysis, author have observed that MS team and Zoom were most utilized by the working people whereas non - working respondents' have given more positive responses towards zoom and Google Meet. Among rest of tools examined in the present study were almost equally utilized by the respondents.

In addition to this, to check the association between the selection of collaboration tool and respondent's status of employment, Chi - Square test was employed. The [Table 3] shows Pearson Chi-Square value ( $\chi^2 = 0.01$ ), ( $0.01 < 0.05$ ) which means there is a significant relationship between selection of tool and the status of employment as ( $p$  value  $< 0.05$ ) at 5 % level of significance which indicates that there is a statistical evidence which can prove that selection of collaboration /communication tools is statistically associated with respondent's status of employment. The reason behind this observation may be working respondents' have used such communication tool which satisfies their professional requirements due to advanced official features. Thus, the present study has claimed the significance of association between status of employment and selection of tool.

### Most commonly used feature of tools

Another objective of the study was to understand which feature of collaboration/ communication tools was mostly used by people during lockdown. Therefore, author have analyzed observations to examine the most commonly used feature of collaboration tool. Results are presented in the [Table4].

**Table 4:** Most used feature of collaboration/ communication tools

		Web Conference	Video Conference	Audio Conference	Screen Sharing	Virtual Interaction	Socially collaboration	Total
Gender	M	18.60%	19.00%	9.30%	17.30%	20%	15.60%	75
	F	20.40%	25.80%	14.90%	11.80%	15.80%	11.20%	76
Total		14.90%	25%	19.30%	13.10%	15.30%	12.40%	151
Job Status	Working	25.30%	26.60%	16.30%	15.30%	2.60%	14.60%	75
	Non-Working	2.60%	34.20%	27.60%	0%	6.60%	28.90%	76
Total		13.90%	30.50%	20.50%	6.60%	4.60%	23.80%	151

Author have observed that in total Video conferencing (30.5%) was most used feature by all respondent's in which bifurcation of percentage - female respondents (25.8%) and Male (19.0%) whereas, the working respondents (26.6%) and non-working respondents (34.2 %) shows a bend towards utilization of this feature other than official purposes also. The reason might be - people were forcefully locked in their houses for almost three months. People were not able to meet their family and friends for a longer time. To have a real time feeling of meetings with family members and friends may have encouraged them to use more video conferencing or calls rather than audio calling. Second mostly used feature of communication/collaboration tool by working people is web conferencing (25.3%) and then audio conferencing (16.3%). Also, in total as well, Audio conferencing (20.5%) was used by respondents. The reason for shifting from individual calls to web and audio conference calls might be - in the absence of operating from offices and interacting with many people together to reach out on a decision was missing during lockdown. Therefore, reaching out too many people at same time, this feature of audio conference was widely opted by many team leads. The next most opted application by non - working people was social collaboration (28.9%) and out of total (23.8%) respondents did use socially collaboration features. Thus, these findings reveal that this lockdown period has forced common person to explore new ways to contacting others or due to necessity of office or daily routine, they had to find new methods of execution of task. Persons with different demographic characteristics have had opted different platforms and therefore learnt different skills by using suitable mode of learning as per their requirement and convenience.

Schools which were reverberating with the echoes of the sounds of children asking questions from their teachers started looking for a zoom platform, Google meet where all of them can learn through online mode. It can also be observed that operating mobile applications suddenly became disciples of you tube to cook, to transform their looks, for communication skills. Old people who were confined to age boundaries, have started taking online tutorials not only in their country but across the world through WebEx. Teachers who always were confident to take a class of 100 students together but was afraid to face the camera happily and rather more confidently facing the camera but giving her best shot by being more and better prepared. Nonworking women who were not awfully familiar with the computers and technology had to learn in a hard way as a compulsion to assist their kids for the online classes. Thus, we can conclude from this extensive data analysis of the present study that the lockdown period has been utilized by many

common people in enhancing their skill sets be it a technical or a non- technical skill. These observations support the objectives of the present paper and can be considered as a positive impact of lockdown on people during such a frightening and serious condition.

## CONCLUSION

The results of the study confirmed that People have definitely tried to expand the horizons of their knowledge and have learnt new skills ranging different domains of life during lockdown. To learn new skills, they have learnt to operate new tools/technology and various applications. Though this dreadful time and fear cannot be welcomed but updating knowledge /skills by people can definitely considered as positive impact of lockdown. The study also claims that there is significant association between the type of skills learnt by respondents and gender, but selection of tools was not statistically proven to be associated with gender. A strong association between selection of tools and respondents job status reveals the dependencies on communication/collaboration tools during the lockdown. Before lockdown they may not be computer/technology savvy but after lockdown, they know much more than ever before. So, during this lockdown, though people may or may not know it but surely, they have surpassed the line from un-digitized to a digital world. At last the study concluded that though lockdown was of course very tough time but still, another face of coin says that it has affected our lives in a positive way by changing traditional methods of managing our daily base activities into digitization.

### CONFLICT OF INTEREST

There is no conflict of interest.

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### FINANCIAL DISCLOSURE

None.

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