Factors impacting usage of ICT product in learning & development

Shubh Khurana[1], Rahul Hiremath[2]

[1,2]Symbiosis Centre for Management and Human Resource Development, SCMHRD, SIU, Symbiosis International (Deemed University), SIU, Hinjewadi, Pune, Maharashtra, India
Email:[1]shubh_khurana@scmhrd.edu,[2] rahul_hiremath@scmhrd.edu

ABSTRACT

Learning and development play a huge part in the growth of individuals and organizations. This makes it very important for both of them to grow and develop continuously. With the growth of digitization & digitalization ICT channels have been developed for learning engagement with users. The purpose of this study is to examine the impact for different factors while opting for the ICT method for learning engagements. The study also puts light on factors which discourage the user for not opting for any ICT method for learning. The research design includes both primary and secondary data collection. Secondary research would be conducted using journals, article and industry reports etc. Primary research consists of a mix of quantitative and qualitative approach and dichotomous scale is used for measurement. We expect to find the factors effecting user's behavior with respect to ICT products in learning & development. This study will provide insights for organizations in order to develop future ICT based learning products.

Introduction

Technology has played an important role in achieving the modern day society. It all started with an aim to reduce the human effort and increase the production of goods, right up to solving problems; it all started with the invention of the steam engine and now we are moving toward the internet of things, technology powered tools & machinery which doesn't require the human hand for operation. Introduction of digitalization and digitization to the way humankind lived three decades back, has transformed the use of technology from being a service for privileged users to a necessity of daily life in the current day and age. E- Commerce would be a perfect example of how technology is enabling us without any hassle. This is the experience that ICT is giving to today's students, as people now rely more on learn time rather classroom time. ICT is enabling every business to increase their efficiency and lower their operating cost. This technology has also increased the revenue for these companies as new ways of doing business are also opening up. The Government has also realized the potential of the ICT knowhow, which has enabled many initiatives for farmers, small manufacturers so that they are equally equipped in terms of knowledge. Technology has enabled us to collaborate and is enabling all the people of the society to help each other in attaining their goals. When mobiles and the wireless system were introduced, they showed that without meeting together at one place, we could effectively communicate as per our requirement and internet was just the icing on the cake for everyone. As we move forward we know technology will be dictating our lives but first we have enable individuals to be part of this ecosystem through technology because as we talk there are a lot people who are not able to afford it and without the government's support it would indeed be a long road ahead to enable each and every citizen.

Digitalization And Digitization

Digitalization and digitization have definitely changed the way but it was digital transformation which brought about a paradigm shift, for example, cloud commuting - through this innovation, organizations were able reduce their reliance on hardware and cloud based subscriptions. This enabled business ecosystems to formulate the technology giants of today, like Google, Microsoft. This transformation helped information technology in a big way, as it helped continents to connect and true level of globalization to be achieved, South Asian countries like China became the factory of the world and India became the IT hub of the world only after 1990, when the digital transformation helped remove logistical and infrastructural barriers. The way we see our industries today, they are far more efficient and more equipped to cater to the demands of the consumer. Online learning and distance learning are able give a similar experience to classroom learning and app-based learning for increasing the accessibility. It is bringing radical changes to the business structure, creating a whole ecosystem including the basic smart phone, web application, block chain, electronic payments, which is helping in reaching the consumer. Internet has changed lives, first by becoming a knowledge center and a virtual communication center and has developed "one" world which complimented human life by reducing the time taken in an activity and increasing the ease of work, for example E-mails which now has now become an official tool for organizations, for both internal and external purposes. Of course, with the introduction of cassettes and CD's, the way we entertained ourselves has been revolutionized completely.

Internet has become indispensable, from reducing the human effort to doing things by itself without the any manual intervention for increasing human comfort, as technology introduced in all the different spheres such as the

automobile sector, entertainment, manufacturing, has reached an integral aspect of human life. In this pandemic ICT has been the driving force for all types of organizations, such as the corporate companies, education centers and public health departments. The technology has addressed the gap that has been created by the lockdown. Manufacturing companies are now shifting towards ICT based machinery in order to reduce the human hand from production .Organizations are planning to permanently shift their workforce to the work from home platform in order to curb the costs and thanks to the reliability of these tools, the efficiency of employees has increased. Smart homes is the latest category where ICT is being used, where home appliances can be used without switches can be used from anywhere without any human touch. The above examples show us that ICT is changing our lives and also changing the way we live.

Information Communication Technology

ICT importance can see through the revolution it has brought, not just in the sectors of the economy, it has changed how airlines would operate , how hospitals would run , how banks would process our transactions. The changes have been faster than ever, we might say. With ICT a lot of gaps have been closed and new dimensions are being chartered to make the world one place. This revolution took pace over a period of time. Scientist started to work developing technology which we today known as "computer" , the first successful step was taken when the transistor was developed by William Shockley. It weighed 50 tons and it became the base for the developing computer, a new technology where its applications were expanded .During the second revolution, which stared around 1970, there was focus on "processors on a chip" and magnetic disc which led to the creation of personal computers built by Apple; Microsoft from being a luxury product, transformed into a daily based need for accounting and processing, which led to more and more people opting to use it. The third ICT revolution was heralded by the introduction of the microprocessor, which changed the dynamics like steering system of airplanes, controls units of power stations, traffic lights on streets, introduction of video players and even the electric toothbrush. An ordinary house contains some 100 microprocessors. The fourth revolution started around 1960 when the U.S defense department drew communication network among computers and the same development in European countries helped to develop system EARN which became an academic institution. Switzerland developed CERN which was crucial for the World Wide Web, helping it to attain more users and thus leading to the development of social networks and becoming a mass market product. This compelled network engineers to build structural requirements to fulfill these needs. The fifth revolution was made possible by mobile phones. When they were introduced, they were big and bulky. With their reduction in size to small and with more functionality, they started with calls, later expanded to messages and music and finally, now the internet. We need to understand that in this fast paced world and ecosystem, which only focuses on the survival of the fittest, ICT has helped us to find an ideal solution, where equality education can be provided. We are seeing some imbalanced societies, especially in the developing countries where resources can easily be found in the metros, though people in the rural and semi urban areas are facing a lack of these facilities. Digital transformation can help us to fasten the process to help new learners learn new things. Yes, we know the required infrastructure is not available and building it would be a gargantuan, unwieldy task, yet with smartphones available with the people now, the process has become easier and most importantly, accessible.

Corporate and New Way of Learning

Today all the organization are in ICT because they have become tools for the corporate employee, for their growth in the organization by aligning themselves to organizational goals, there has been an evolution in terms of career and learning. It has changed now more towards collaboration that suits the employee as his/her needs, rather than as per the manager's direction. Earlier training centers were corporate universities for employees as they had classroom sessions and some online sessions but now it has shifted towards micro-learning and massive open online courses. Learning technology was earlier used only for course catalog and compliance but now it is more focused on collaboration and curated learning experience. The biggest shift has been in the course design. Earlier the courses were designed by the learning and development experts but now it is curated by the human resources team and senior management as per the organization and employee needs. Learning and development used to be tick box activities but now it more towards gaining an edge over the competition and to stay ahead on the curve. As focused learning has increased, now organizations are increasing cross-functionality, which encourages interdisciplinary thinking and also increases togetherness among teams.

- Micro Learning: - This is the latest form of ICT tools of learning which is catching up fast. The content is byte sized so as to help the user to keep learning while having a busy schedule.
- Wearable technology Training: - There has been a rise of virtual reality equipment's, like Google glass, Oculus rift which help the user to interact through these gadgets with 3D simulations and scenarios.

Learning & development departments help the organization attain the goals which they have set for themselves by training the people & helping them develop into future leaders, as the corporate ecosystem is getting more dynamic and frugal. L&D practices can be a backbone for deriving the right culture .Organizations have focused on different aspects which help them to achieve their vision, mission and the financial goals which are:-

- Consumer experience which is the most important aspect for any business to understand the consumer needs and most importantly, their perspective and journey as new ways of reaching the consumer are being developed in order to cater to increasing satisfaction levels. For this, it is very much important to have the right people with the right attitude at every touch point.
- Innovation and Change is a continuous process and L&D teams are the torch bearers in its implementation, handling every possible hindrance in order get the best result.

• Product & Service Portfolio plays a key role in building a strong brand image and to serve what one says. This can only be achieved by doing in action what the brand says and to do this, a strong team at the operational level is required with operation in multiple geographies. Digitalization has helped in rolling out training sessions and in the implementation of new product/service launches.

Challenges for ICT in Education to Flourish

Yes, ICT has opened new potentials in the education sector and is trying to fill the gaps but it has also come up with some new challenges in terms of quality and equity. When we talk about developed economies like America , England and Japan where infrastructure is readily available and consumers have enough means to buy them, it makes ICT tools work as an enabler rather than a restriction and the quality of the trainer is also another factor to be taken into consideration, which again is good in the Western world but when we talk of Asian and African countries, where the required infrastructure is not available because of its cost as citizens of these countries cannot afford it. This disadvantages a large section of the population who are not able benefit from this tech marvel which has the capacity to help them enormously. As these countries also suffer from low literacy rates, good quality of education is hard to come by, which further leads to a low quality of trainers and teachers. This further discourages the users who want to opt for it. The students and teachers are not trained enough to use these tools which is another drawback as some sections of the population might not see a computer in their lives, so for them ICT tools may become a challenge of usage. Due to these two factors, small and medium enterprises have not updated them in terms of technology and machinery. They operate as a business which wants to reduce costs so they implement the new technology but these small units are not able to make the required changes and due to competition they become out of favor which leads the closure of these small operators.

Problems Faced by the User

Technology has changed our lives but there are some issues which we have to address in order to use ICT tools because people are mentally stressed as they have to be constantly available in front of the screen. They feel sleep deprived after constantly using these systems which increases the rate of burn outs , there are both mental and physical health hazards due which users face different kinds of problems .During this pandemic, there are reports that employees are being over worked , facing health issues like panic attacks. Digital stress is also a major issue. As we also face the problem of accessibility where internet services are not available, we are not able to cater to the needs of all users. Education based startups are trying fill the gap, for example, India has a population of 1.3 billion but there are only 450 + million users, so this shows us that around half of the population is not able to use any kind of technology in terms of modern technology tools.

Educational Tech Start-ups

Education is a fundamental right but when it comes to its implementation we have observed that a large segment of the population does not have adequate or in fact any resources in the form of infrastructure, manpower etc. which are critical aspects but even there, with the government interventions we are seeing that the problem is being solved. EdTech start-ups, as they say, with the help of ICT tools, are trying to address two problems. The first is to connect every student with the source of quality education which can help them and the second is to help the untrained or undertrained workforce, which can again assist them to be employable and help the business with their newly acquired skills. We also need to understand that some children who are enrolled into schools are without any educational background of the parents, which makes it further difficult for the educator to impart quality content and as this technology can adapt as per the users need, this makes it a viable choice in the future. Some start-ups have been addressing this problem such as Byju's, UP-grad, and Unacademy, to name a few. These companies are complementing the needs of the people which helps the user and many big venture capitalists are investing in these ideas as they see the potential is huge, due to the fact that quality of education and govt. based skill development programs are not able address the problem. With the investment of 3 billion in FY 20, it shows us the potential of these companies and the demographic divide of the Indian population shows the potential of the market.

Scenario of Indian Education Sector

India a country of 1.3 billion people, with half of the population in the age bracket of 5-35 years and with 39391 colleges & 993 universities [1]. The education sector contributes $91.7 billion to the economy which shows the potential of the Indian education system. Every year more than 30 million students enroll in higher education & the gross involvement ratio has reached 26.3 percent in FY19. Indian education still works on the factory model of education. With introduction of technology, E- learning has also become a big driver in this space, with an expected contribution of $1.96 billion and 9.5 million subscribers by FY21 . India has received an investment of $ 3 billion dollars in education- based startups like Unacadamy, Byju's. Around 3500 startups are catering to the education sector. Collaboration of the Maharashtra Government with Google as well as the Singapore government opening a training center in Assam are some of the examples of collaboration. 18 mergers & acquisitions have taken place which are worth $ 49 million .The future also looks bright with the introduction of online learning & gamification is hoping to grow 38% CAGR with 50 % increase in gross enrolment ratio because of the simple reason that with the help of technology, the gap in terms of quality of education in rural & underdeveloped cities with metropolitan areas, can be addressed . Education sector   has seen reforms and with improved disposable income, our country can become a knowledge haven. The Central Government has also launched schemes like the Pradhan Mantri Gramin Digital Sakshtra Abhiyan, Skill India, and Pradhan Mantri Yuva Yojana.

Digitization & Digitalization of Learning & Development

Digitization is a process that includes various stages, selection of material to be digitized, assessment metadata data collection and creation. It has helped the companies to build MOOCS (Massive Open Online courses) which has enabled lots of users/students to learn remotely and has given a paradigm shift to what learnt; from being a factory model learning to E-learning with the help of ICT tools .The business world is also taking help of digitalization in order to upskill their employees and in imparting learning & development program . In this emergence of the current pandemic, education institutes are switching to online live classes to educate the students. In the 20th century digitization was first introduced, where books were transformed into digital copies as the technology advanced and in order to increase the ease of learning and focusing on the learner needs. With the introduction of digitalization a lot of e-learning tools have been developed which include: -

Digital classrooms: - Now classrooms are equipped with ICT Tools in order to aid the trainer and to increase the quality of learning for the user. This method is being used in private schools to acquire and disburse new knowledge.

MOOCS: -Massive open online courses are a very common method now days. In this a user is provided with the lectures, videos, study material and problem sets. This method is generally used by remote based learners.

Virtual reality /Simulation: -Artificial environment is created with real life scenarios to train people for their jobs and is also used by educational institutes for practical learning.

Activity Based Learning: -In primary education, teachers are using this technique by making students take part in those tasks and activities which are linked to their curriculum as this method is fun based learning.

Gamification: -As people are moving towards app-based learning because of its convenience and because it can be used at any time of the day, companies are moving toward gamifying to make them more user friendly and to increase the quality for achieving greater adoption rate.

LMS: -Learning management system is used by a lot of corporate houses where operation is large scale, scattered all over a given area and in order to give continuous learning. LMS systems are used which are ICT tools, where only a computer system is required.

Blended Learning: -Blended learning is a combination of face to face interaction and online command by using online learning platforms, social media, system tools.

Literature Review

K. Shanmugam & B. Balakrishnan observed the impact of the ICT tools which showed increased motivation among the users to use the technology which led to high involvement among the users, finally resulting in an increase in the grades of the students. Another observation made was that teachers were also motivated in using the tools as their efficiency increased with the help of ICT tools[18].

Sabine Seufert & Christopher Meier observed on the implication of implementation of digital transformation where the authors focused on two factors I) Competence clarification II) Competence Development, where they

further stated that deep-down L&D units would support the business in some of following aspects: -

- Roles
- Communication & Collaboration
- Strategy
- Mission & Vision of L&D

Henning said that as we move forward the virtual world and reality would be the main drivers in the given economy, as technologies are becoming low cost and innovation is changing the dynamics. He says that as we are entering industrialization 4.0 Internet of things(IOT), data & services are the new drivers and with this level of digitalization, they would enhance the quality of service and products. He laid particular emphasis on strategies which would help to align with new things and he also talked about the potential of further economic boost to the German economy.

Maria Jose Sousa & Alvaro Rocha discuss about the organizational digital transformation and its effectiveness based on skills like artificial intelligence and nanotechnology, internet of things, robotization, digitization, augmented reality and devices using mobile technologies, tablets and applications for them. They focus on the challenges that organizations can face while providing the people with skills.(14)

Dr. Vivek Pimplapure & Dr. Pushparaj Kulkarni observed a paradigm shift in education getting digitalized with the help of ICT tools. They gave a glimpse of the traditional education system which didn't enable a lot of people to receive any type of learning but the introduction of digitalization in education has revolutionized it. The latest trends in the way we learn are discussed along with the advantages and challenges of e- learning. They tell ways to make it more effective and more accessible too[23].

Serena Masino & Miguel Nino Zarazua wanted to learn the impact of interventions in improving the quality of education in developing countries for the derivations 1) Supply side capability intervention that operates from physical and human resources , learning material; 2) Policies that through incentives seek to influence behaviour and inter-temporal preferences of teachers, households and students ; 3) Bottom-up and top-down participatory and community management interventions, which operate through decentralisation reforms, knowledge diffusion, and increased community participation in the management of education systems. The authors found that combined interventions are more useful and also put light on unattended demand[24].

Mohd Akmal Faiz Osman, A. K. talk about the satisfaction and improvisation in the teaching and learning process. The researchers focused on determining the relationship between the satisfaction levels among the users from the following factors: ease of use, perceived usefulness, system quality and information quality; where they found a strong relationship between ease of use and satisfaction of the user and followed by the above mentioned factors[19].

Juergen Bleicher and Henriette Stanley put light on how digitization played a catalyst role, increased their economic success by ERRC and also how different organizations implemented this, like Rolls Royce focussed on aircraft engines, total care, flight efficiency and material testing which helped in increasing flight efficiency by focusing on performance data, research and development as well as

manufacturing. My Muesli, an FMCG identified online shopping portal, customized automated service, mixing customized orders by exploiting digitization strategically. The start-up Patient like identified co-creation, research service and data for research, managed community as drivers and implemented research service data for research. These implementations while "enabling", "complementary", and "functional," have helped organizations to increase their revenue and profits[26]

Santiago Alonso-Garcia, Inmaculada Aznar-Diaz, Maria-Pilar Caceras-Reche,Juan-Manual Trujillo-Torres and Jose-Maria Romero-Rodriguez observed good teaching practices with the help of ICT develop reference models which help educators to use technology in their classrooms. The authors focused on finding a method for educators to find ways to include ICT in classroom learning and building of matrix to measure the efficiency[8].

Garba et al . announced that in the efforts to re-establish the true potential of ICT in education, Malaysia is at a more advanced stage. Malaysia has internet access at home, at work, at school and in public places. ICT teaching materials allow continuous use of the mate rials: they can be deliberately used when the pupils have no time limit. This situation motivates data on the learning process which can be more effectively delivered by using ICT [13].

Pei-Chen Sun, Ray J. Tsai, Glenn Finger, Yueh-Yang Chen, Dowming Yeh investigated factors for adoption of e-learning flexibility, e-learning course quality, perceived usefulness, perceived ease of use, perceived satisfaction. Course quality was most important for the user and technical design of the course which helped in ease of use and the authors also talked about the different assessment methods such as peer review, self-assessment. The authors talked about anxiety which users could develop and which could decrease the satisfaction so the right instructor should be found for the students[25].

Gabriele Piccoli, Rami Ahmad, Blake Ives observed three dimension which included human dimension, design and effectiveness in virtual learning environment. It was found thatusers would have increased user anxiety which affects the learning satisfaction which would increase the mental pressure, composed of trait anxiety and state anxiety [2] [13]

Research design

Research design used compound method approach involving quantitative & qualitative data. Qualitative questions focused on how the ICT tools have helped the user in learning / developing him/herself , while Quantitative questions focused on the factors relationship of ICT tools and user friendliness for the users. The questions are designed broadly based on **User friendliness**, **Quality of the content provided, availability of tools and the cost involved and impact of usage of these tools on human beings has been examined**. In the first category we have talked about ease of learning, interactive quality of the tool for the user and also the evolving technology of the ICT tools. In the second category we have focused on the quality of the content provided and whether with usage of these tools the efficiency has increased or not for the user, as it plays an important role in the buying decision of the user.

In the third category, we have focussed on the availability of infrastructure in the decision making process, where the availability of internet, hardware and cost of the ICT tools have been included. In the fourth category, we have included the physical and mental illnesses caused by the usage of these and also about the overall awareness regarding this. Data from the questionnaire we have received has been measured with dichotomous scale.The reason behind using dichotomous scale was to measure the interest of the user for using the ICT Tools. The researcher has used percentage to see factors which make the user attracted to use these tools and also the problems which the users faced while using the same .The research involves random & convenience sampling that has been selected at different age groups in order to gain overall insight into what the user feels about these tools in terms of the given factors .The questionnaire has been analysed using percentage. The answers were analysed manually by counting percentage.

Result & Analysis

The research involves 90 respondents of different age groups 15-18(17%), 19-22(10%), 23-27 (49%), 27 or more (26%).Gender analysis showed that 59% were male and 38% were female respondents while 2% preferred not to state their gender. The respondents were from different backgrounds like Students(58%) , WorkingProfessional(15%)Teachers/Trainers/Professors(16 %) and others (11%) .

The Data showed 85% respondents know ICT Tools used for Learning and commonly used tools were apps, digital classrooms, LMS etc. 15% of the users didn't use them. 86% users responded that by using the ICT tools they are able to save time and 79% of the users responded that they face ease of use due to an ICT tool because they enable the users to access or learn as per convenience and with the introduction of mobile apps - based learning users can use them on the go which makes it more attractive as it helps them to save time.
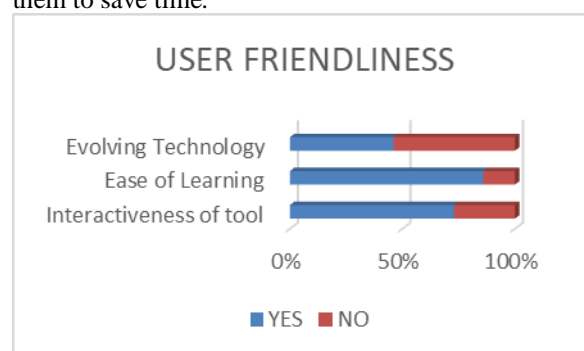

Fig. 1. User Friendliness

Due to e-Learning courses' flexibility in time, location, and methods, participation and satisfaction of eLearning learners are facilitated [3] [4] [6].In addition, elimination of physical barriers enables more dynamic interaction that fosters establishment of constructive learning and opportunities for cooperative learning [7] [8]. With no restrictions on time and space in e-Learning, students can communicate instantaneously, anytime, anywhere [9] [6] [15].Moreover,

its virtually eliminates awkwardness associated with face-to-face communication in traditional classrooms. Learners can express their thoughts without Reticence and ask questions through discussion group or bulletin board systems [15] [9] [10].Currently, most e-Learning courses are in complimentary learning and continued education programs, and learners are mostly people on the job [4]. The definition of e-Learning course flexibility is learners' perception of the efficiency and effects of adopting e-Learning in their working, learning, and commuting hours. The quality of well-designed e-Learning programs is the precedent factor for learners when considering e-Learning. Quality is another important factor influencing learning effects and satisfaction in e-Learning [13]. Under the constructive or cooperative learning model, interactive communications and media presentation provided by IT can help learners develop high-level thinking models and establish conceptual knowledge [6]. The virtual characteristics of e-Learning, including online interactive discussion and brainstorming, multimedia presentation for course materials, and management of learning processes, assist learners in establishing learning models effectively and motivating continuous online learning [13] [16].As per the users they are learning more with the help of an ICT tool as 67% respondents believe that the quality of the product is much better as compared to its peers and 72 % respondents say these courses are highly interactive and therefore increase the efficiency of learning by 86%.
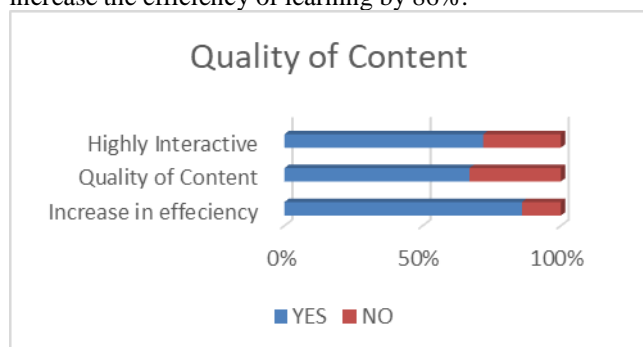

Fig. 2. Quality Of Content

says the higher the learner 's understanding of contact with others for the enjoyment of e-learning. Interactions between learners and others in a virtual learning environment, or Course materials can assist with problem solving and enhancing success. Electronic interactions may boost Effects of learning [13].
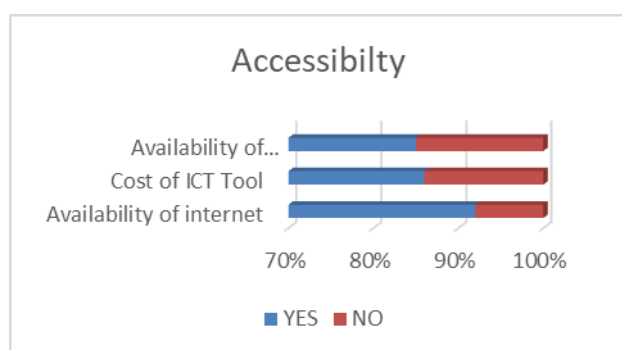

Fig. 3. Accessibilty

Whenever any user buys courses which are based on the ICT tools, cost of the tool drives the decision making as 86% of respondents said yes to the cost being the major driving factor, 85% users also said before buying such products they consider whether they have required infrastructure such as laptops, mobile phone or tablets. 92% of the respondents said that without internet access available they won't be interested in buying these products.
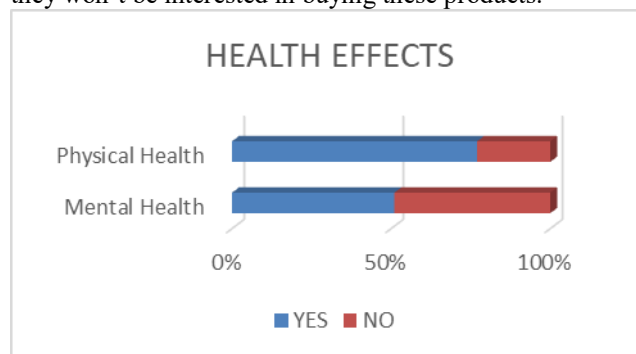

Fig. 4. Physical Health

Several researchers indicate that technology quality and Internet quality significantly affect satisfaction in e-Learning [16][17]. software tool with user-friendly characteristics, such as learning and memorizing few simple ideas and meaningful keywords, demands little effort from its users. Users will be willing to adopt such a tool with few barriers and satisfaction will be improved [16][17]. Therefore, the higher the quality and reliability in IT, the higher the learning effects will be [13] [14] [16] [17].
Respondents are aware about the physical health problems they are facing while using the ICT tools as 77% respondents are suffering from headache, backache, loss of acuity of vision. Respondents are also suffering from mental stress, panic attacks, depression, with 51% reporting at least one of these, This also shows that users are aware of the health hazards of the tools. 46% of respondents feel that fast changing technology acts as a hindrance for opting for ICT tools and 70% of the respondents feel motivated to use these tools because they are able to reap more benefits.

Discussion

The biggest find from the survey was acceptance among the respondents to use technology for learning; this has been because startups are filling the gap which remained unattended if person was not a part of the formal setup of education. With technology in education, people are now able to learn or develop a new skill .Technology has brought a shift which was sorely required with the changing needs of the end user. With the rise in certification courses to keep employees updated with the latest business processes, changes have started to take place right from the primary school level to the corporate level. In surveys we found more than half of the respondents have used technology aided tools .We need to understand that as the world is looking industrialization 4.0, introduction of machine learning and artificial intelligence, we as workforce have to be equipped enough to cater to the new kind of requirement. Thanks to interventions by technology, redundant jobs are

being removed from the system and more analytical work is being introduced.

India with its young population and with the introduction of 4G based internet service, can upgrade the quality of the education and can also improve it in rural areas as well. People in the metros are happy to enrol themselves in an online course seeing that convenience and high quality of content is helping to reskill them as per the market requirement. This study also shows where respondents are motivated, the students and teachers are highly motivated to use the ICT tools (Therefore, we can say trainers and students/ learners are happily embracing the change. We have been talking about benefits of technology and ICT but respondents also shared the health hazards they are facing like stress, headache, panic attacks. We need to find the solution to reduce the problems so that adoption rate increases among people.

Limitations

Limitations are not uncommon in the field of research. They include factors which are not being considered for the research or are beyond the control of the researcher. In this study, we have the following limitations:

- Other factors that may influence the adoption and usage of ICT tools are not considered. This study only takes into account the three variables of **Quality of the content provided, Availability of tools and the cost involved and the Impact of the usage of these tools**. The intervening effects of other variables if any are assumed to be absent.
- The sample size taken for the research is quite less. More respondents would have given better results.
- The online questionnaire might have made it difficult for respondents to scroll through and fill their desired responses.
- The respondents have mostly been among the age-group of 23-27. Other age groups are largely not among the respondent pool and they may have offered different insights.
- The respondents are largely based in metros due to which a country wide perspective of the study, including rural and remote areas, has not been feasible.
- Other intricacies may be there in the research variables that are beyond the scope of this study.
- The questionnaire has over 90
- elements so there may be some form of an acquiescence bias among the respondents.

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