



Impact of Edtech on teachers in Colleges

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ABSTRACT: The Indian education sector has been subjected to numerous amendments and transformations. After Independence, several initiatives were taken by successive governments to develop our education system, particularly at the college level. Educational policies of developed countries, new technologies and automation also impacted our education system. The concept of “EdTech” is one such remarkable aspect that shows the revolution, being undergone by the Indian Education system. Edtech, or education technology, is the practice of introducing Information and Communication Technology into the classroom to create engaging and inclusive learning experiences. Sessions involving PowerPoint presentations through projectors, online courses which can be attended through tools like Coursera and NPTEL, AI tools, ERP and other computer-aided tools, Internet of Things, preparation of pdf-report and PowerPoint presentations by students and uploading them in applications unique to institutions, the concept of online classrooms, that became popular after the surge of Covid-19, are just a few among the numerous examples of Edtech. A report recently prepared by Team Lease Edtech survey revealed around 79.34 per cent of teachers adapted to EdTech tools by practice, 35.54 per cent of teachers equipped themselves by taking courses provided by institutions, 25.62 per cent learned about the EdTech tools from friends/colleagues/family, and 19.01 per cent equipped themselves by undertaking self-sponsored courses, according to a report by EBEF (East Brunswick Education Foundation), the Indian EdTech industry was valued at US\$ 750 million in 2020 and is expected to reach US\$ 4 billion by 2025 at a CAGR (Compound Annual Growth Rate) of 39.77%. This research aims to analyse how this concept of EdTech has impacted the teachers in their professional growth, and their suggestions regarding how the EdTech tools can be made user-friendly going further. Research is conducted in Coimbatore district. Research involves questionnaire surveying across some selected colleges in the Coimbatore district.

KEYWORDS: Edtech, Indian Education sector, Information and Communication Technology, Coursera, NPTEL, Online classrooms.

1. INTRODUCTION

The education sector in India has always been subjected to various transformations from time to time. India has one of the largest higher education systems in the world and stands second in terms of the higher education network. The entire higher education ecosystem in India comprises around 1000+ universities and 42,000+ colleges imparting exceptional education. All these institutions fall under the purview of the Ministry of Education. Indian Higher

education sector (college level) has always been subjected to transformations from time to time, including the latest National Educational Policy-2020 which allows students to choose between a 3-year UG degree or a 4-year ‘Honours’ degree after completing school-level education. Increasing competition and new technological innovations in all companies irrespective of whether they are small-scale, medium-scale, large scale or multinational corporates have created the necessity that job aspirants passing out of the colleges must possess additional technical skill sets along



with their conventional degrees awarded by the colleges. This would mean that with conventional under-graduation or post-graduation alone, an aspirant cannot survive in the job market for the long term. As we have experienced the job market is dynamic and sometimes even vulnerable to uncontrollable crises like recession, it has become a matter of survival not only for aspirants but also for existing employees that they always remain up-to-date along with the changing technological requirements and rebuild their knowledge and skills like the way a woodcutter sharpens his axe whenever he takes rest during his job of cutting trees for wood. To rebuild their knowledge and skills first aspirants need a mindset which is always open to learning new things and creative enough to implement new ideas in the right context. This has made educational institutions rethink educational patterns. The outcome is that many educational institutions have started incorporating skill-oriented courses related to computer proficiency, accounting, product/software design, artificial intelligence, etc. into their graduate courses, so that students passing out of college may get a job based on their graduation or based on their complementary skills which they acquired as a result of attending additional courses related to computer proficiency, accounting, product/software design, artificial intelligence, etc. Colleges have reconstructed their technological infrastructure. They have created computer labs with updated software applications and advanced ICT tools which will enable them to provide additional skill-oriented courses. This requirement for highly sophisticated technological infrastructure initiated the development of a new sub-sector in the IT field. This new sub-sector in the IT field which is called the “Edtech sector” deals with creating and maintaining software applications which are used by teachers as tools to impart education to students, to evaluate their assignments, enter marks, etc. The concept of online classrooms, online assignments and project submissions are the examples of latest innovations by the Edtech sector which emerged in the wake of the Covid-19 pandemic. All these scenarios further stress that teachers soon have to deviate from board-chalk teaching methods and resort to the effective utilization of ICT tools as a matter of survival in their profession. College teachers need to know computer applications, software applications, ICT tools and automation techniques. Teachers need to adapt themselves to drastically changing technological scenarios for effective usage of ICT tools in imparting conventional and skill-based education to students. This research analyses how the utilization of Edtech has changed the professional lives of teachers in UG Colleges providing Engineering & Arts and Science courses in the Coimbatore region along with determining their pros and cons from the point of view of teachers. This involves

providing questionnaires to the teachers across selected colleges in Coimbatore and collecting their responses.

2. REVIEW OF LITERATURE

The review of earlier studies and observations by eminent researchers about Edtech industry and its impact in education sector has been very helpful in this research. Previous observations and studies have been helpful in creating a foundation for framework about the impact of Edtech industry in Indian education sector, which can be used for analyzing the pros and cons of Edtech, what are the present and future challenges which lower level and higher level educational institutions can face in implementing and sustaining the educational technological tools and applications, and also how to improve and update the version of educational technology and supporting infrastructure. Covid-19 though was a time of crisis, but later became a golden opportunity for IT companies to create a new sector called the Edtech sector through which they will be providing technological assistance. Companies like Vedantu, Byju's and Whitehat Junior functioning on the Edtech concept attained mass popularity during Covid-19 and hence have been topics of interest for researchers. Previous studies and research mentioned below as reference, and also the emergence of the Edtech Industry as a sector with ample scope for creativity and innovation by IT experts and various institutes like Vedantu, Byju's Whitehat Jr, etc. mentioned above utilizing the services of Edtech companies has been useful references for this research.

1. The use of educational technology is shifting toward fee-based enterprise-level applications and free, open-source collaboration and presentation tools. Educational technology is enabling teachers to restructure classroom time for purposes other than the transmission of factual information, and to take an evidence-based approach to instructional innovation and reform. (Monaghan, Michael ,2011).
2. The app is interactive, comfortable, and effective, according to the majority of respondents. However, the study also discovered that some users are unable to effectively use this App for personalised learning because they are not regular app subscribers. For the average Indian student, a regular subscription is prohibitively expensive. Byju's App is working hard to change the educational landscape and will undoubtedly reach a large number of people if it can be made more affordable (Palliyalil, Sruthi,2020).
3. During the COVID-19 pandemic, Byju's app was a leading online education brand, with 85 percent of parents subscribing to this mobile app for their child's education. As a result, the coronavirus crisis aided

Byju's app's rise to the top of India's online education providers. (Sigma Sathyan,2021)

4. Coronavirus is one of the most prevalent patterns in word search clustering, with the education system at the helm and preventive measures in place to restore balance to the educational system. In the last year, there has been a significant increase in the number of online platforms. Existing educational institutions have effectively converted traditional education into new-age online education with the help of virtual classes and other key online tools in this ever-changing scholastic setting. The most popular online platforms for conducting classes are Microsoft Teams, Zoom, Google Meet, and WebEx, and whiteboard software tools and learning apps such as Vedantu, Byju's and Whitehat Junior have been major market players in the education system over the pandemic year. (Ashwani Kumar Kansal, 2021)
5. E-learning is defined "as the process of learning online, especially through the Internet and email". (Webster's New Millennium™ Dictionary of English). Online learning is defined as "an e-learning method where a student can learn at any time or location over the internet. (Shabha 2004).
6. E learning involves more than information transfer between an instructor and participants where selected readings and lectures are sent to the participants who then respond with assignments and examinations. (Benbunan-Fich 2003).
7. There are two major types of E-learning which are Asynchronous and synchronous E-learning. Asynchronous e-learning allows the student to participate based on time and schedule, without live interaction with the instructor While Synchronous e-learning involves interacting with an instructor via the Web in real time. (Mehlenbacher B et al 2000).
8. Over the past 20 years, technology has transformed society and changed many aspects of daily life. The proliferation of technology has led to a growing consensus among educators and the general public that it should play a more integral role in students' education (Culp et al., 2003; CEO Forum on Education and Technology, 2001; Fouts, 2000; Johnson, 2000).
9. Districts and schools implement technology initiatives for different reasons. Program goals include increasing students' economic competitiveness, reducing inequities in access to computers, raising student achievement, increasing student engagement, creating a more active learning environment, and making it

easier to differentiate instruction according to students' needs (Bonifaz & Zucker, 2004).

10. Each technology is likely to play a different role in students' learning. For example, word processing and e-mail can improve communication skills; database and spreadsheet programs can enhance organizational skills; and modeling software often increases understanding of math and science concepts (Honey et al., 2005).

3. DATA AND METHODOLOGY OF THE STUDY

Even though colleges are keen in implementing the concept of Ed-tech, they are facing certain challenges rather obstacles in the same as to whether they have got adequate infrastructure to support the implementation and whether the teachers are able to cope up with it. As many teachers have been used to teaching and evaluation method which involved board & chalk method and paper work will they be able to cope up with this sudden change is a matter to be explored. Even if they are proficient with computers, they can find it difficult to handle technology if Edtech application is not user friendly. Thus, appropriate planning is needed for creating proper technological infrastructure to support Ed Tech applications and providing prior training to teachers before start working with those applications. Even after starting their work, it becomes necessary to collect feedback from teachers regarding the user friendliness of applications and improving their effectiveness with the aid of Ed-Tech experts from time to time. In this backdrop it has been identified that a research work needs to be conducted in the field of "Impact of Edtech on Teachers in Colleges". Coimbatore region has been chosen for this study as Coimbatore is one of the favourite destinations of UG and PG educations for students from South India and colleges there have been undergoing significant transformations in collegiate education from time to time in terms of quality of education and making students employable to face competitive corporate world existing beyond the confines of the college.

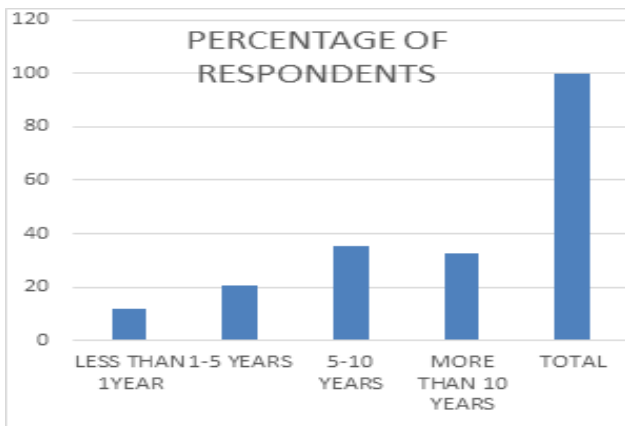
The objective of this research is to study about various "Edtech" initiatives implemented in UG colleges with special reference to Coimbatore district, to determine how those initiatives impact the staffs and to provide the recommendations for the effective utilization of "Edtech" concept based on teachers' feedback.

The research type used in this study is descriptive and analytical research. Convenient sampling method is used in this study. The minimum sample size taken for the study is 100. Primary data are collected through Questionnaire surveying. Secondary data are collected through internet,

books, journal, article, Website, etc. The tool used for analysis of the study is simple percentage analysis.

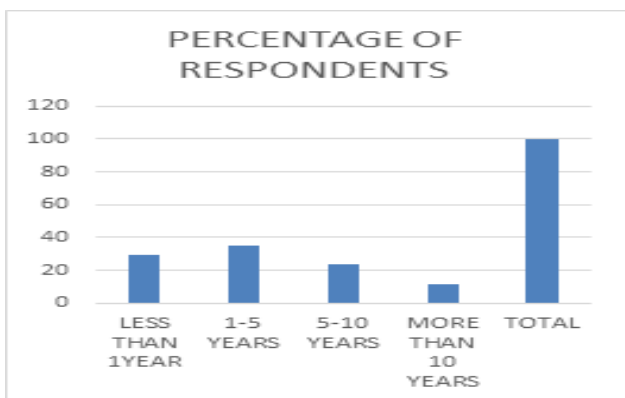
4. DATA ANALYSIS AND RESULTS

I. Number Of Years Of Experience



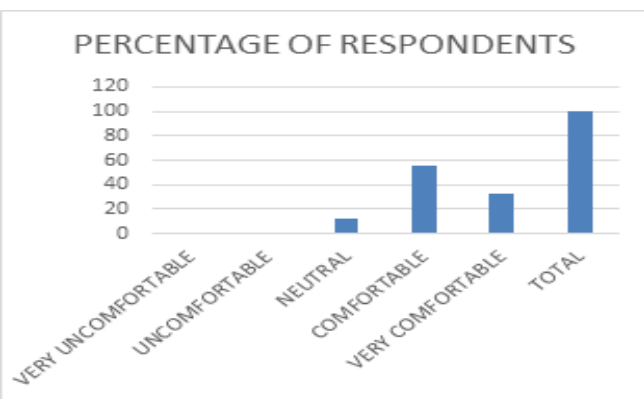
It has been noted that around 68 percent of respondents have 5 or more than 5 years of total experience in teaching profession.

II. Number of Years Respondent is Working with Current Institution



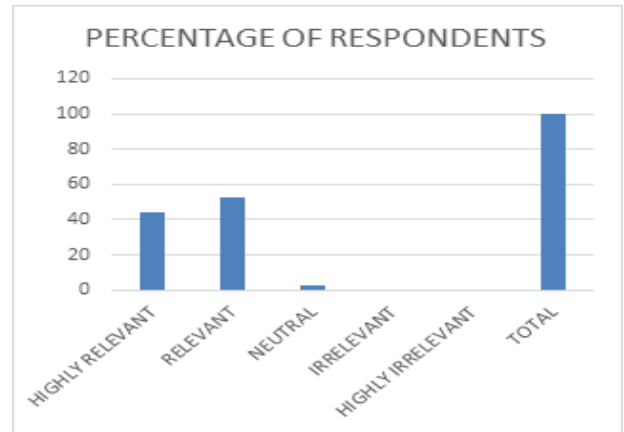
It has been noted that around 65 percent of respondents have less than 5 years of experience in working their respective current institutions.

III. Comfortability of Respondent with Sourcing Relevant Information On The Internet



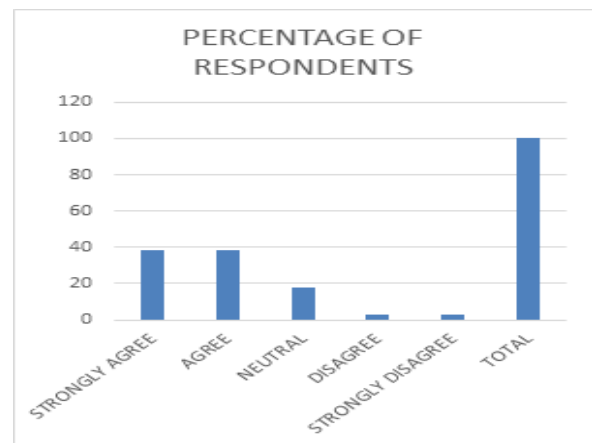
It has been noted that around 88 percent of respondents are comfortable with sourcing the relevant information on the internet while remaining 12 percent of respondents were neutral on this.

IV. Rating of Relevance of Technology in Learning by Respondents



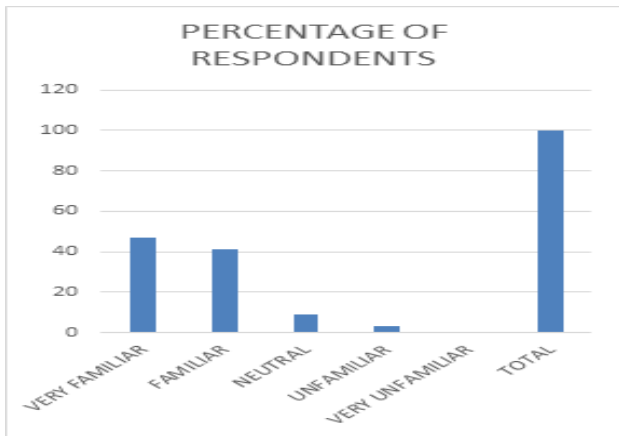
It has been noted that around 97 percentage of the respondents rated the relevance of technology in learning as either “relevant” or “highly relevant”. This data shows that majority of respondents are ready to adapt themselves to the changing technological environment prevailing in the educational sector.

V. Colleges Provide Adequate Support In Getting Familiar With Technological Tools



It has been noted that around 76 percentage of the respondents opine that, their respective colleges are providing them good support in getting familiar with the technological tools while around 18 percentage of the respondents remain neutral about it. Around 6 percent of the respondents are not satisfied with the support provided by their colleges. This underlines that even though to a small extent a gap exists with regard to the communication and guidance provided by the colleges to the staff regarding the technical tools to be used in their profession, which needs good attention.

Vi. How familiar are the respondents with the online teaching tools

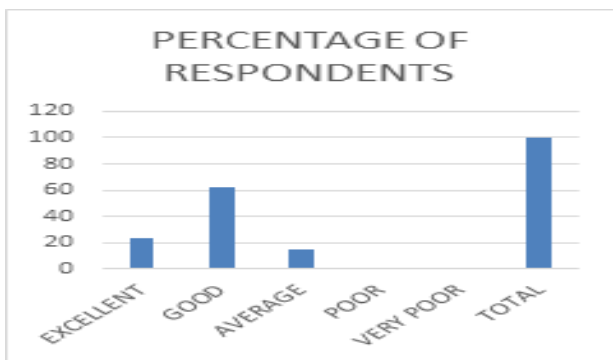


It has been noted that around 88 percent of the respondents are familiar with the online teaching tools, while around 9 percent of the respondents remained neutral and remaining 3 percent are unfamiliar with the online teaching tools. This shows that a small percentage of respondents are still yet to deviate from their conventional methods and become adaptable to the changing technological environment of education though they are well experienced in their teaching profession.

VII. Online Teaching Tools used by Respondents

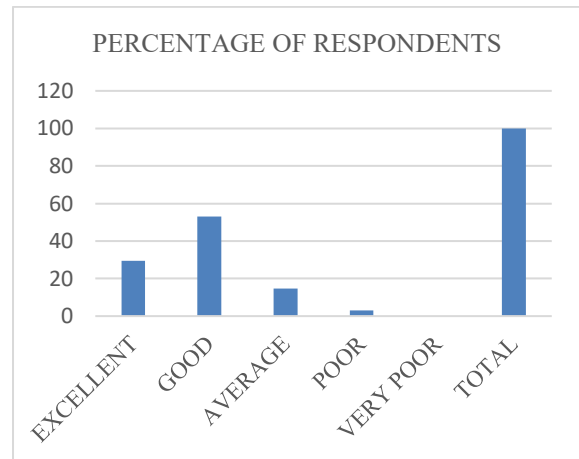
Among the online teaching tools used by the respondents, it has been found that Google class room and Zoom are the most common tools. Some of the respondents also know the tools like Kahoot, Tophat, Jam, one-note, myclassroom, etc. which not that frequently being used by the teaching staffs.

VIII. Proficiency of Respondents in Technology



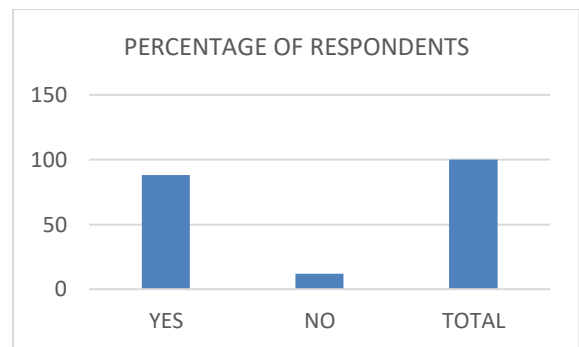
It has been noted that around 85 percent of the respondents have rated themselves in terms of the proficiency in technology as either “Excellent” or “Good”, while remaining around 15 percentage of the respondents rated themselves as average. This again stress the need for effective training to be imparted by the college management to the working staffs.

IX. Rating of College’s Utilization Of Technology In Learning And Teaching By Respondents



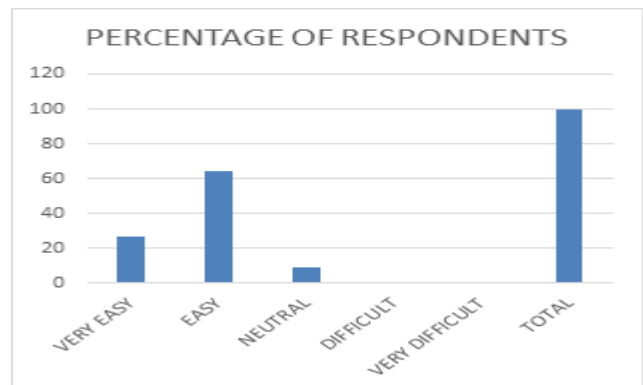
It has been noted that around 82 percentage of respondents have opined that, their respective colleges effectively utilize the technology in learning and teaching process.

X. Utilization of Online Teaching Tools by Respondents to Plan Lessons



It has been noted that around 88 percentage of respondents utilize online teaching tools for planning lessons, while remaining 12 percentage of respondents are not using online teaching tools for lesson plans.

XI. Easiness Of Respondents In Linking Teaching Process With Technology



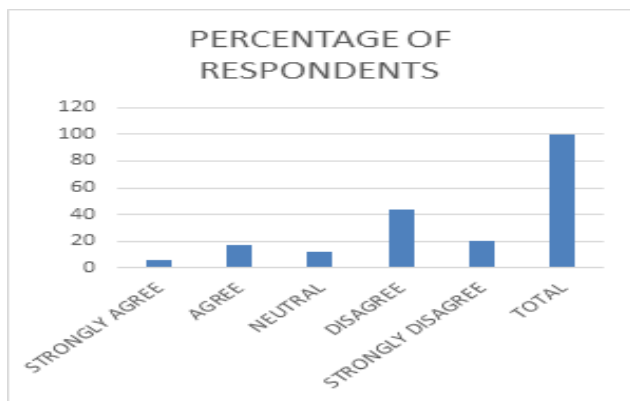
Around 90 per cent of the respondents have opined that it is easy for them to link the teaching process with the

technology while the remaining respondents are neutral in this.

XII. Use of Technology By Organization To Achieve Its Objectives

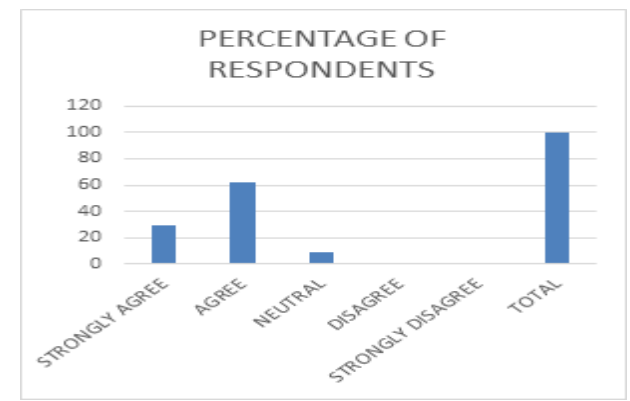
It has been noted that around 82 percentage of the respondents either agree or strongly agree that organization uses the technology effectively to achieve its objectives, while 9 per cent are neutral about it. 9 per cent of the respondents are not satisfied with the utilization of online tools by the organization to achieve its objectives. This underlines that some colleges still need to update themselves in terms of technological infrastructure.

XIII. Respondents are Uncomfortable While Working With Computers



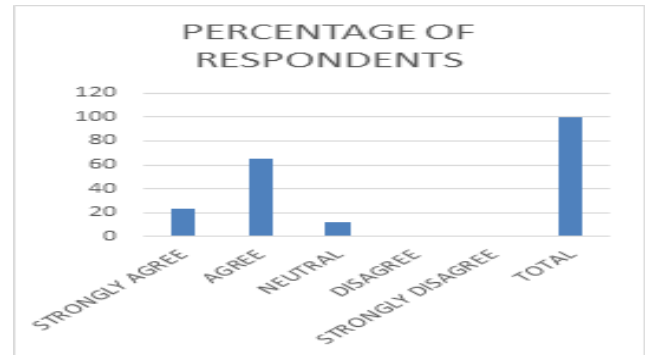
It has been noted that around 65 percent of the respondents either disagree or strongly disagree that they feel uncomfortable while working with the computer. This indicates that majority of the staff find it easy to work with computer. Around 12 percentage of the staffs remained neutral in this aspect. Remaining around 23 percent staff, state that they find it uncomfortable while working with computer. So these staffs need to be given adequate attention and guidance by the college management and colleagues.

XIV. Whether Teachers' Training Should Include Hands On Proficiency In Computers Also



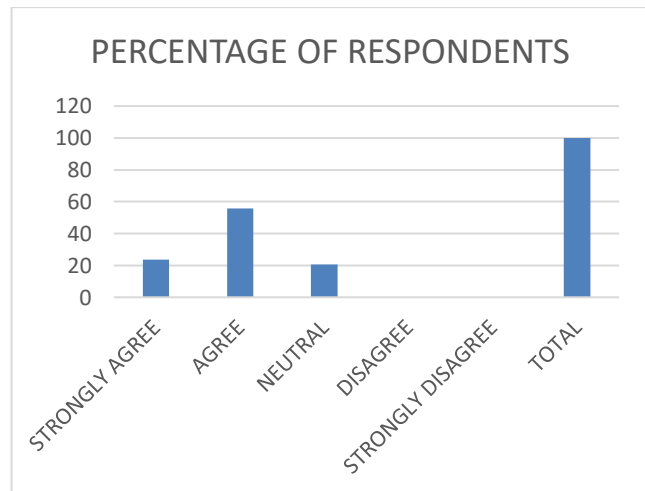
It has been noted that around 91 percentage of staffs agree that hands-on proficiency in computers need to be included in teachers' training provided by colleges which will make them easy to get equipped with the knowledge and skills to handle online tools.

XV. Whether Lesson Delivery Is Improved And Enhanced By The Use Of Online Teaching Tools



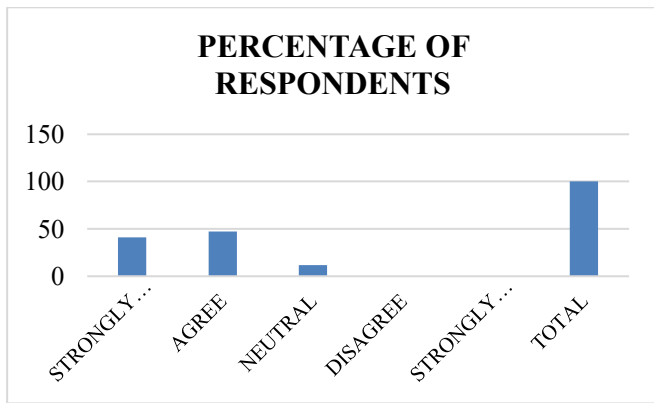
It has been noted that around 88 percentage of respondents agree or strongly agree that lesson delivery has been improved and enhanced by the use of online teaching tools, which indicate the effective utilization of technological tools by the staffs. Remaining 12 percentage of staff, remained neutral about this.

XVI. Whether Online Teaching Tools Enhance Students' Learning



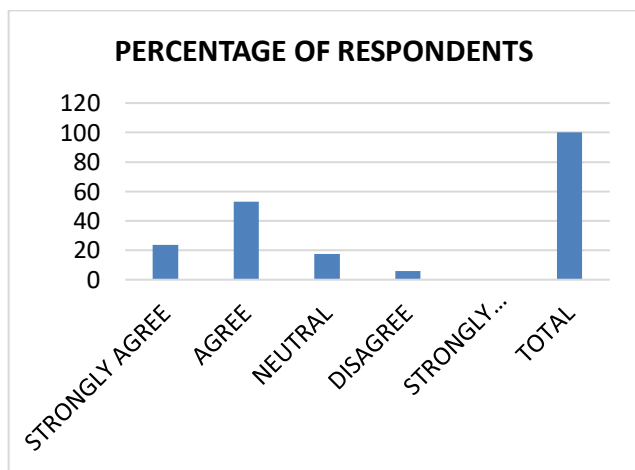
It has been noted that around 79 percent of the respondents either agree or strongly agree that students' learning has been enhanced by the implementation of online teaching tools, while remaining 21 percent of the respondents remained neutral in this case.

XVII. Whether students can access courses, assignments, course outlines, etc. Regardless of location and time with online teaching tools



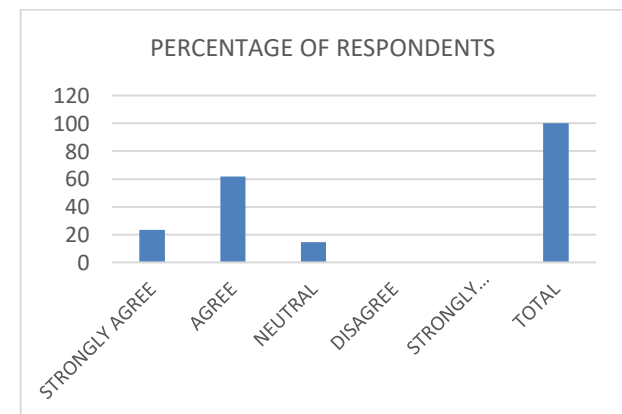
It has been noted that around 88 percent of respondents agree that students can access courses, assignments, etc. regardless of time and location with online teaching tools.

XVIII. Whether Students Utilize Online Teaching Tools Effectively



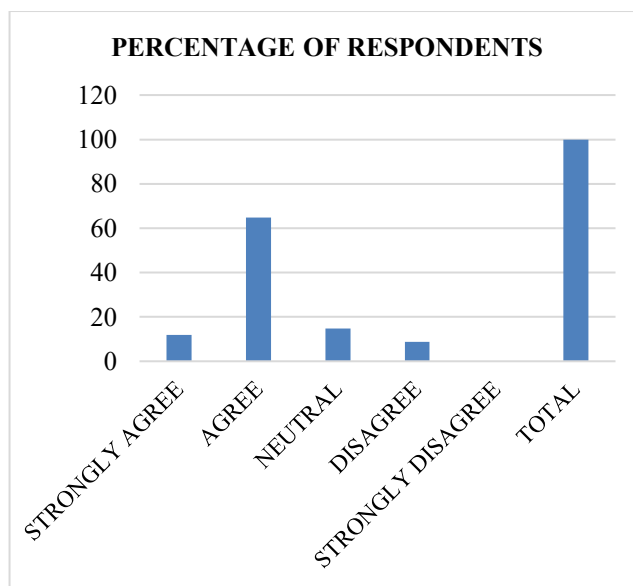
It has been noted that around 76 percentage of respondents either agree or strongly agree that students utilize the online teaching tools effectively. 18 percentage of respondents are neutral about this. Remaining 6 percentage of the respondents say that students are not utilizing the online teaching tools effectively. This indicates some colleges have still got a bit long way to go to make their students accustomed with the online tools.

XIX. Online Teaching Tools Are User Friendly



Around 85 percentage of the respondents either agree or strongly agree that online teaching tools are user friendly. Remaining 15 percent of the respondents opine that online teaching tools are not user friendly. This issue needs to be addressed immediately by the college management as this will be affecting the people who are also proficient with the computers.

XX. Online Teaching Tools Consume A Lot Of Time Particularly When It Comes To Uploading Documents And Evaluation



It has been noted that around 76 percentage of the respondents opine that, online teaching tools consume a lot of time particularly when it comes to uploading the documents and evaluation, which needs the immediate attention of college authorities in reducing the complexity of online tools.

5. CONCLUSION AND POLICY IMPLICATIONS

From the above study, it is clear that the majority of staff have an adaptable mindset to learn the technologies, except for a few. Even though most of the staff have got a good amount of experience in their profession, some of them still struggle, to cope with the technological transformations being implemented in the educational sector, which needs to be changed. For that, they must first develop an open mindset to accept the new technologies. From the college authorities' side, they must also take sufficient steps in establishing user-friendly technological infrastructure, hi-tech computer labs with well-advanced versions of hardware and software and user-friendly applications. Training sessions need to be established regularly. If not, colleagues can have informal training sessions also. Even though it is well known that online teaching tools can enhance student learning, in some colleges sufficient steps are not taken to make the students aware of it, as some students are not utilizing the online



tools. For that purpose, also, staff need to be empowered. Also, college authorities must make sure that applications are user-friendly and that time is not consumed while working with online tools. In a research survey, we can see that most of the staff have opined that online technical tools always consume their time so staff are finding it difficult even to complete their routine tasks. So, the complexity of procedures involved in completing the tasks is a major issue faced by almost all the staff even those who are proficient in computers and well-versed in technical applications. So care has to be taken by college authorities and edtech companies aligned with colleges that technical tools are user-friendly.

5.1 Policy Implications.

The researcher would like to suggest the following policy implications based on our above study:

- There should be ample technological infrastructure to support edtech applications.
- Teachers should be trained in Edtech applications and that too without compromising their regular working hours.
- Management authorities should take care that edtech applications they install are user-friendly and not time-consuming to work with as is the problem with most of the Edtech applications in the colleges.
- Training programmes must be organized for students also.
- Students who are doing Under Graduation related to Computer Science or IT can also be encouraged to work on Edtech applications to update them. For this purpose, proper tie-ups can be made between Edtech companies and students.
- In upcoming years Government bodies related to education like UGC, AICTE can make mandatory that teachers need to have minimum DCA (Diploma in Computer Applications) qualifications along with conventional PG and PhD qualifications.

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