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Research Article

A Study on Innovative Teaching and Learning Process during Covid19

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Abstract:
Education is the light to show the direction to success. The purpose of education is not just to literate the students but to add value to the existing knowledge, develop the skills and creative thinking so they become more employable. With the advent of digitalization, there are many different platforms where students can educate themselves but what's lacking is the innovation in teaching. The success of students depends upon teachers with the innovative ideas they bring to teaching to make the theoretical concept more relatable and understandable. Now is the time to change the education system from rote learning to thinking! To make the changes happen it is also required to take the teaching profession as a priority and not an option, teachers should have good knowledge about the industry, and to make this happen preferably they should work with the industry every year or be a consultant. Teachers should bring innovation in teaching by giving the students hands of experience by including live projects, fieldwork, and activities, which will make the class interesting and students will remember the concept easily. It is high time both, for the students as well as teachers for a change, which can be met if they accept the challenge. Faculty members are constantly looking for new and effective ways to engage their students in the learning process. More than ever before, students in higher education will apply what they learn in university to professional careers that do not yet exist. To become global leaders and valuable citizens of today and tomorrow, our students must learn to be independent critical thinkers, to be socially and ethically responsible, and have a broad understanding of the world. Different innovative teaching methods are now in use across the globe.
Through the present study, an attempt has been made to know the opinions of the faculty members and students about e-learning practices implemented by the educational institutions and highlights the various problems faced by the faculty members and students. The study shows that there are positive as well as negative effects on the higher education system of India.

Keywords: Innovation, Teaching, Learning, Education, covid19, lockdown

Introduction:

The year 2020 started with a lot of hope and as everyone was enjoying the new beginning, we were clueless about what's hiding in the coming days. However, the corona novel virus was started in other countries, the impact can be seen on India soon, and the entire nation is under lockdown by March 2020. This affected almost all industries right from manufacturing and service to educational institutes. Covid 19 pandemic has significantly disrupted various sectors at the global level more or less and hardly any sector remained unaffected by this world crisis. One of the major sectors, which was affected by this crisis, is the Education

sector. Due to Covid 19 pandemic, governments across the country started shutting down schools, colleges, and Universities. This was a crucial time for the educational sector and there was a drastic change in the teaching-learning process. And we are observing the change in the education sector where we thought that without teaching face to face it will be difficult to teach and the time came where we are observing a drastic change. The challenges were to reach the students and make them understand the concepts through the screen, but is it effective?

Main educational methodologies are:

• The traditional classroom education were books, blackboards are used by the teacher as a teaching aid

• Modern classroom education, where the classrooms are equipped with whiteboards, projectors or audio-visual display equipment and digital boards

• Online education, where information technologies and communications are used to help in the development and acquisition of knowledge from different remote locations. It uses the internet and video/audio and text communication and software to create the learning environment.

There can be several types of online learning: Knowledge base, online support, asynchronous training, synchronous training, hybrid training Knowledge Base type is a set of lessons that are published on the website and have general instructions of learning that a student has to follow, with no support available. The online support type is a modified version of the knowledge base, where the support is available so there is a discussion board, web forum, or another communication way available to get support on some topics. Asynchronous training is the one where the lessons do not take place in real-time, but the students are provided with content regularly. Instructors are assigned and provide support through email or other communication platforms.

There is a pre-set time to log in to the online education environment and participants can communicate directly with the teacher and other group members. Hybrid training is a combination of online and in-person interaction.

The situation in general education in the country has changed in 2020 when the first case of coronavirus COVID-19 infection was detected. A virus has infected millions of people globally. And it has changed the scenario of the teaching-learning process.

Research Objectives:

1. To know the different platforms available for online learning (MOOC)
2. To know the different platforms available for online teaching and learning
3. To find out the most preferred platform for online teaching and learning
4. To understand the challenges faced by students and Faculty members during online classroom sessions
5. To understand the strategies used to cope up with lockdown.

Hypothesis:

H_0: There is no preferred app/platform for online teaching-learning during Covid 19 lockdown

$H_{1:}$ Zoom app is the most preferred app/platform for online teaching-learning during Covid 19 lockdown

H_0: There is no change in enrollment of Massive Open online courses

$H_{2:}$ There is a significant increase in enrollment of Massive Open online courses

H_0: There is no increase in stress level by online teaching and learning during COVID 19 lockdown

H_3: There is a significant increase in stress level by online teaching and learning during COVID 19 lockdown

H_0: There is no difference in working hours for online teaching and learning during COVID 19 lockdown

H_4: There is a significant increase in working hours for online teaching and learning during COVID 19 lockdown

Literature Review:

Learning is a part of everyone's life, both socially and professionally, so it's natural to assume that it occurs often, whether consciously or unconsciously. (Coffield, 2000; Illeris, 2009). Teachers learn about their role and the world around them, through experiences, consultations, experiments, thoughts, and problem-solving, as well as through studying other practitioners in schools and outside. (Eraut, 2007; Bakkens et al.., 2010). Therefore, teachers learning in today's situation is no longer an option but a duty to adapt and, learn the technology to impart quality education innovatively.

To understand the idea of innovation, one must leave the realm of education, teaching, and learning and venture into areas where innovation has already had a significant impact, such as research, technology, and industry. These three fields are typically known for their creative abilities, possibly because creativity is often linked to innovation perhaps it's also because creativity is often linked to invention, science, and economic growth. Understanding what innovation is, how and why it has become so important to the vast majority of industries will aid in grasping its new significance in education. Kovacs, H. (2017)

"Innovation is the process of making changes, large and small, radical and incremental, to products, processes, and services that result in the introduction of something new for the organization that adds value to customers and contributes to the knowledge store of the organization" (O'Sullivan, 2008).

So, as per the definition, to do innovation, all you have to do is use a range of tools and techniques to bring about this transition. As a result, this concept can be applied in a variety of settings, including education.

E-learning tools have played a crucial role during this pandemic, helping schools and universities facilitate student learning during the closure of universities and schools (Subedi et al., 2020).

While adapting to the new changes, staff and student readiness needs to be gauged and supported accordingly. The learners with a fixed mindset find it difficult to adapt and adjust, whereas the learners with a growth mindset quickly adapt to a new learning environment. There is no one-size-fits-all pedagogy for online learning. There are a variety of subjects with varying needs. Different subjects and age groups require different approaches to online learning (Doucet et al., 2020).

Online learning also allows physically challenged students with more freedom to participate in learning in the virtual environment, requiring limited movement (Basilaia & Kvavadze, 2020).

According to the UNESCO Innovative Teaching and Learning (ITL) Research project conducted in several countries, "ICT has great potential for supporting innovative pedagogies, but it is not a magic

ingredient." The findings suggest that "when considering ICT it is important to focus not on flash but on the student learning and 21st-century skills that ICT can enable" (UNESCO,2013).

Flexibility is a key factor in effectively catering to the learning needs of diverse student cohorts (Yorke & Thomas, 2003). In terms of how flexibility, variety, and choice might be achieved while maintaining appropriate standards, the use of technology, a variety of teaching strategies, and choice and flexibility in the assessment are required.

The use of innovative teaching strategies has been a hot topic for the last decade. Creative and skilled teachers are being found using different innovative teaching methods at higher education levels. Many studies consider creativity as a personal trait and intellectual ability of different individuals, associating creativity with genius and intelligence (Albert & Runco, 1999)

The development of online courses in higher education doesn't happen overnight. The 2008 study by the National Center for Educational Statistics (NCES) found that the main factors influencing higher-education institutions to offer online courses included meeting students' demands for flexible schedules (68%), providing access to college for students who would otherwise not have access (67%), making more courses available (46%), and seeking to increase student enrollments (45%) (Parsad, Lewis, & Tice, 2008).

The advent of the World-Wide Web (WWW) in 1991 was a powerful catalyst for moving distance education forward and was a milestone in the rapid expansion and growth of online teaching and learning. Maloney-Krichmar and Abras (2003) stated that WWW "facilitated the wide-spread use of websites and the development of online community groups supported by web pages and various forms of communications software" (p.4). Since then, colleges and universities both in the United States and around the world have offered not only just online courses but entire degree programs online as well (Wallace, 2003).

P. K. Jena, (2020), has highlighted the major effects of the Covid pandemic on higher education. Author has stated that due to the Covid pandemic many new modes of learning and teaching, new perspectives, and trends have emerged in the entire educational sector. Through the study, the authors have focused on the new trends of higher education institutes in the post-Covid pandemic era. In the opinion author, the Covid pandemic has provided an opportunity for the change in pedagogical approaches and introduce a virtual education system.

Research Design:

Exploratory and descriptive research methodology is used for the research. Data was collected from multiple sources, for secondary data, various journals, and articles were referred and primary data was collected through structured questionnaires via google forms from undergraduate and postgraduates' students and from teachers of various institutes and universities across Pune city to understand the teaching-learning paradigm. Secondary data were collected through various study papers, research papers, articles published in various national and international journals.

Universe: Educational institutes of Pune City
Sample element: Student and Faculty Members (undergraduate and Postgraduate)
Sample size: 111
Data Analysis: the collected data is processed, analyzed by using chi-square statistical tools wherever required, and presented by using various graphical diagrams

Limitations of the study –

The main purpose of the study is to examine the impact of the COVID pandemic/lockdown on the educational institutions of undergraduate & postgraduate only and therefore the present study does not deal with the other types of higher educational institutions. Many factors may be directly/indirectly influenced due to the Covid pandemic and lockdown, but the present study is confirmed only to the impact on teaching and learning practices in educational institutes

Analysis :

The collected data is analyzed by various statistical tools. The following figure depicts that the responses are received from 111 respondents. Out of which 42.3% are students and 57.7% are Faculty members from various universities in Pune.

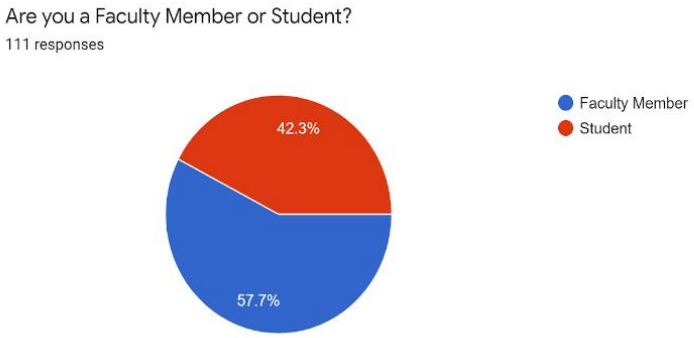


Fig: 1

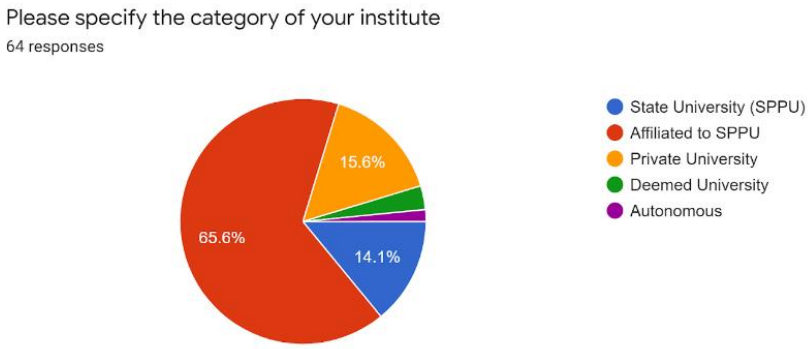


Fig: 2

The above figure no. 2 depicts the response received from the faculty members from the various institutes of Pune city. 65.6% responses are received from the faculty members from the SPPU affiliated institutes, followed by Private and state university

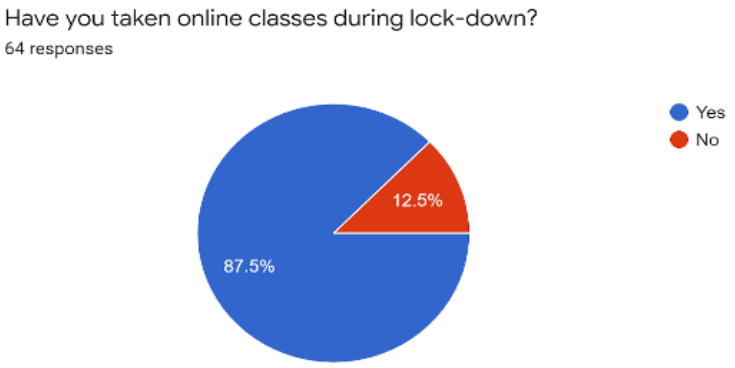


Fig: 3

As per the survey conducted it can be seen that most of the universities started online teaching during the lock-down period. 87.5% of universities started taking online classes and 12.5% did not start online sessions during the lockdown period.

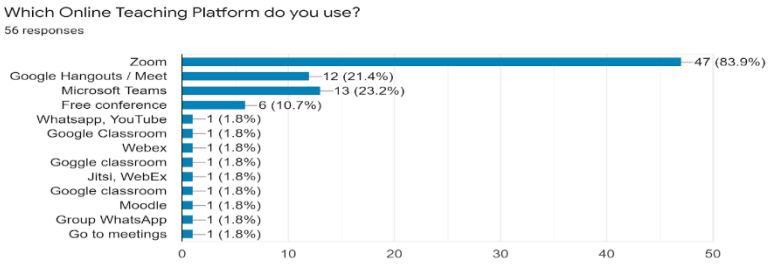
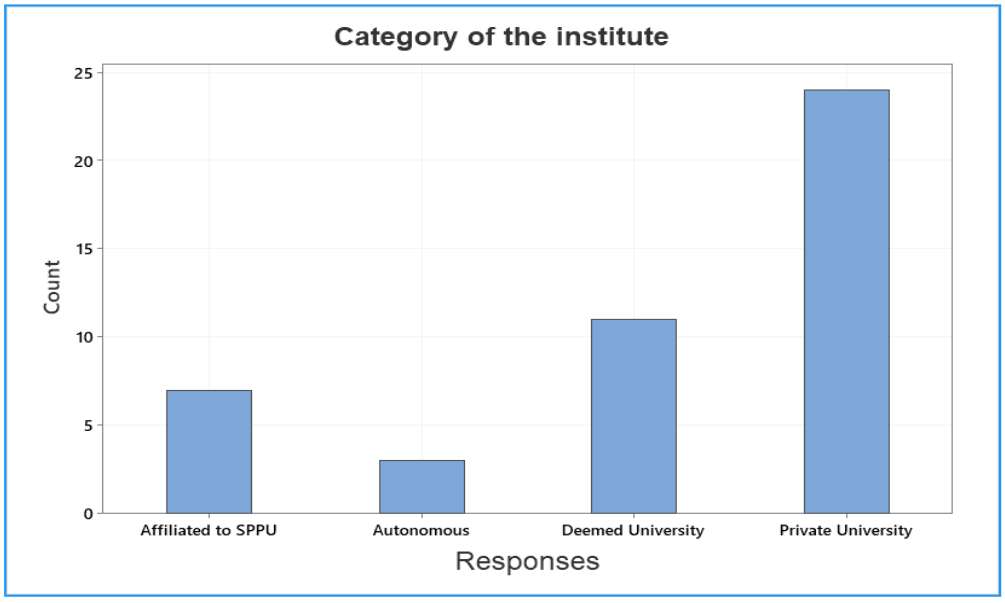
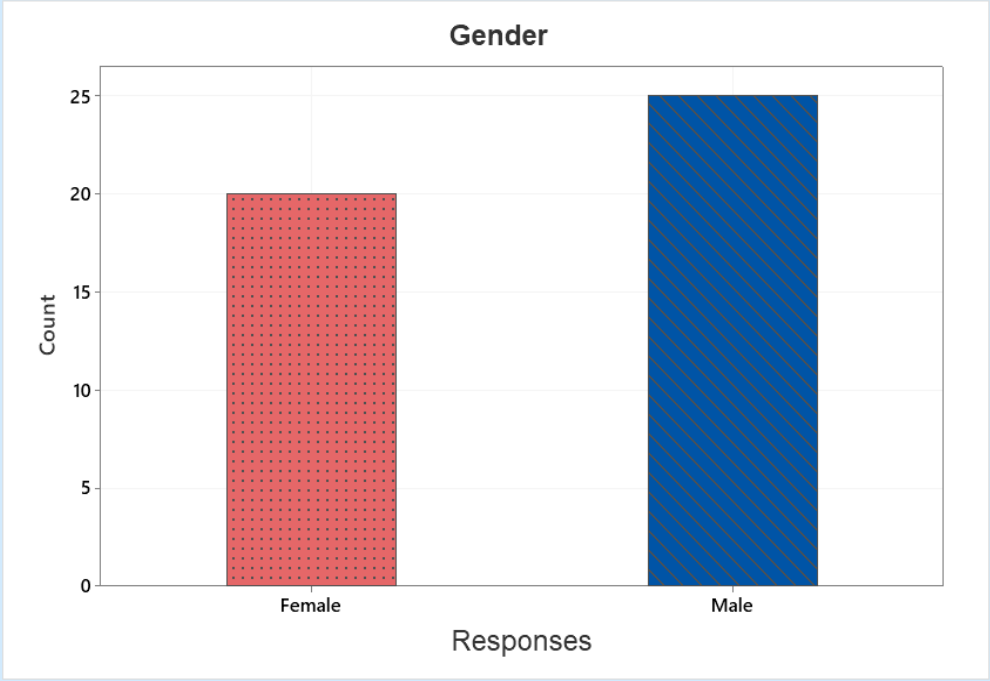


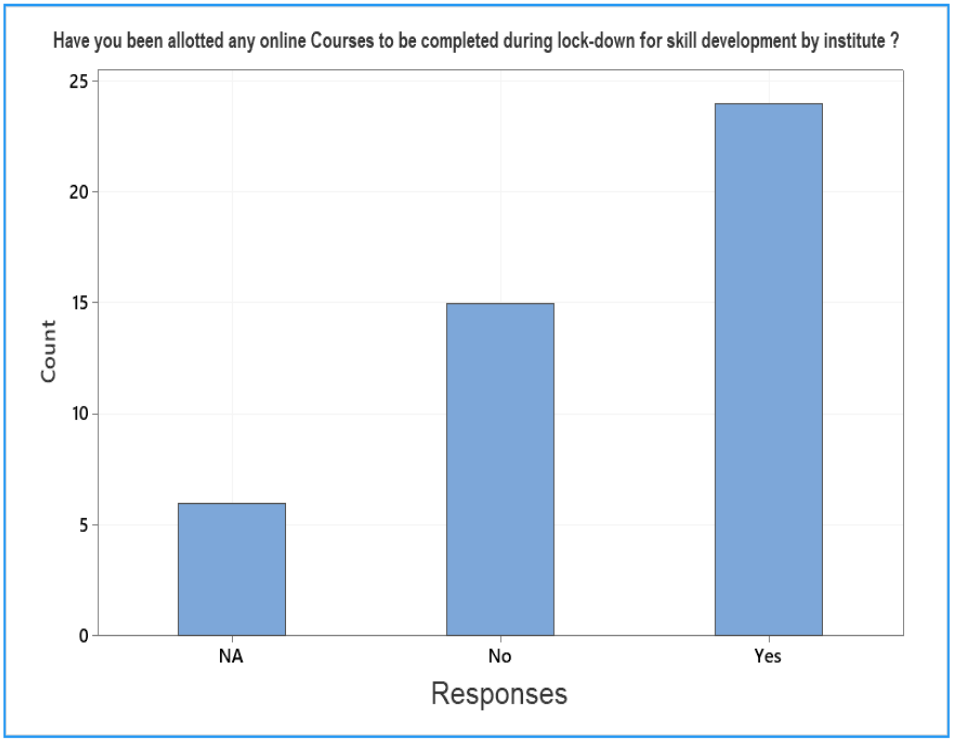
Fig: 4

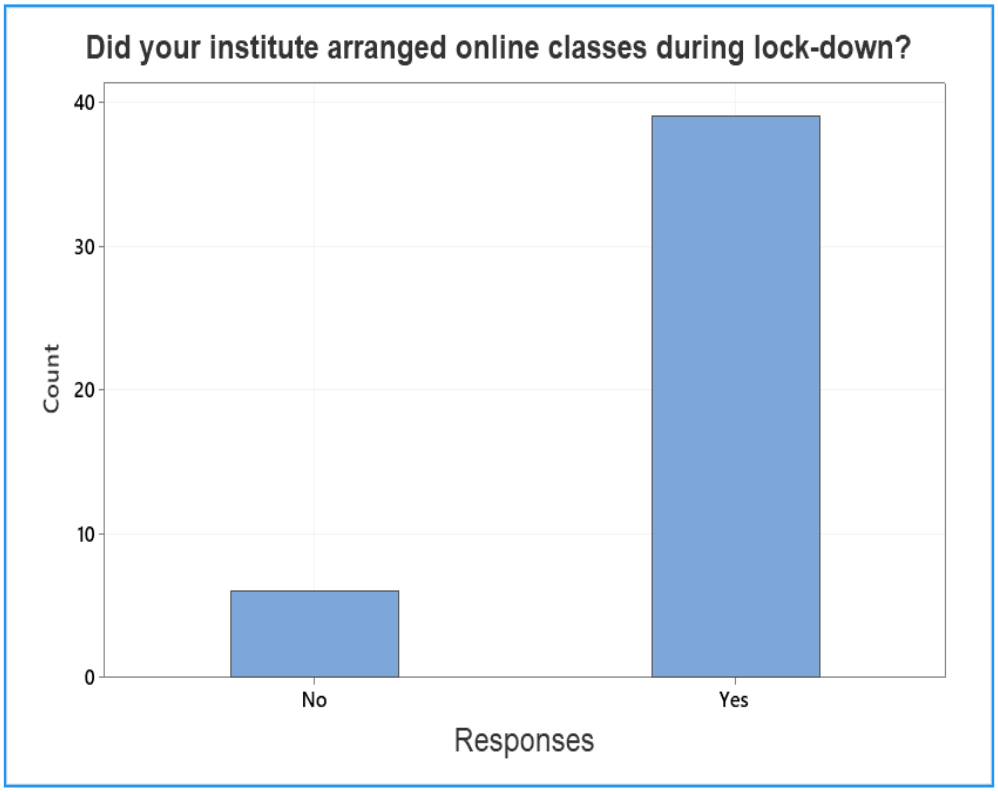
As per the responses received from faculty members from various institutions and universities, the most preferred platform for online teaching and learning used was Zoom. The reason for the same was it was easily accessible and most of the participants knew about Zoom.

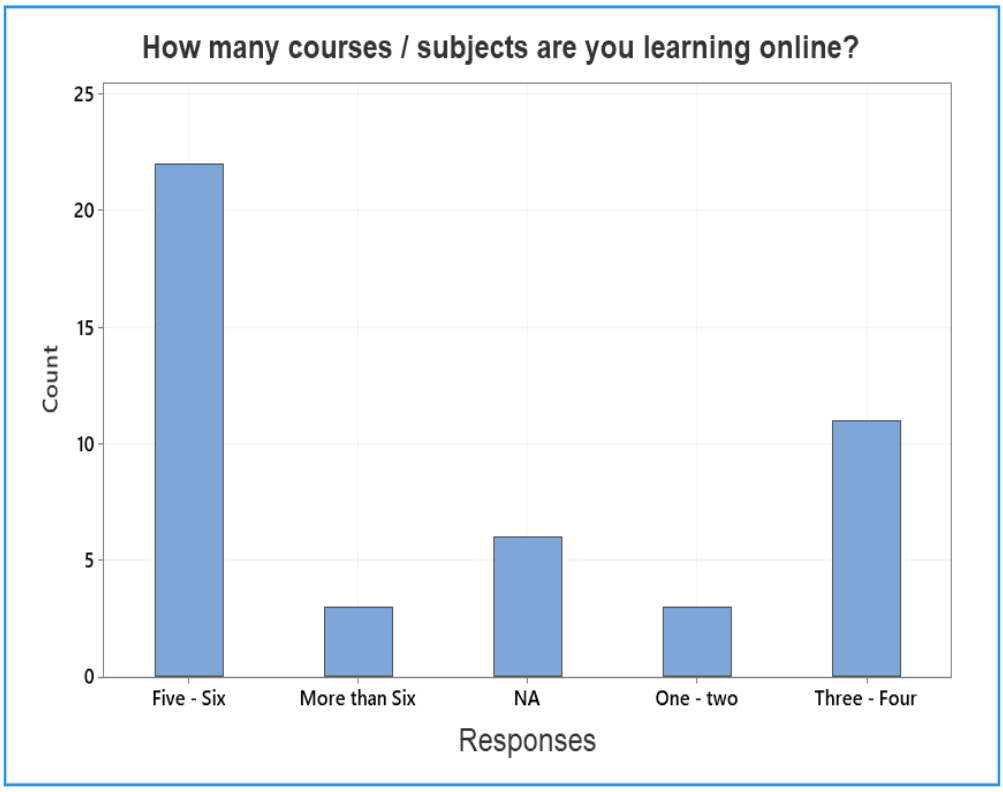
Following is the descriptive statistics of the responses from the respondents :

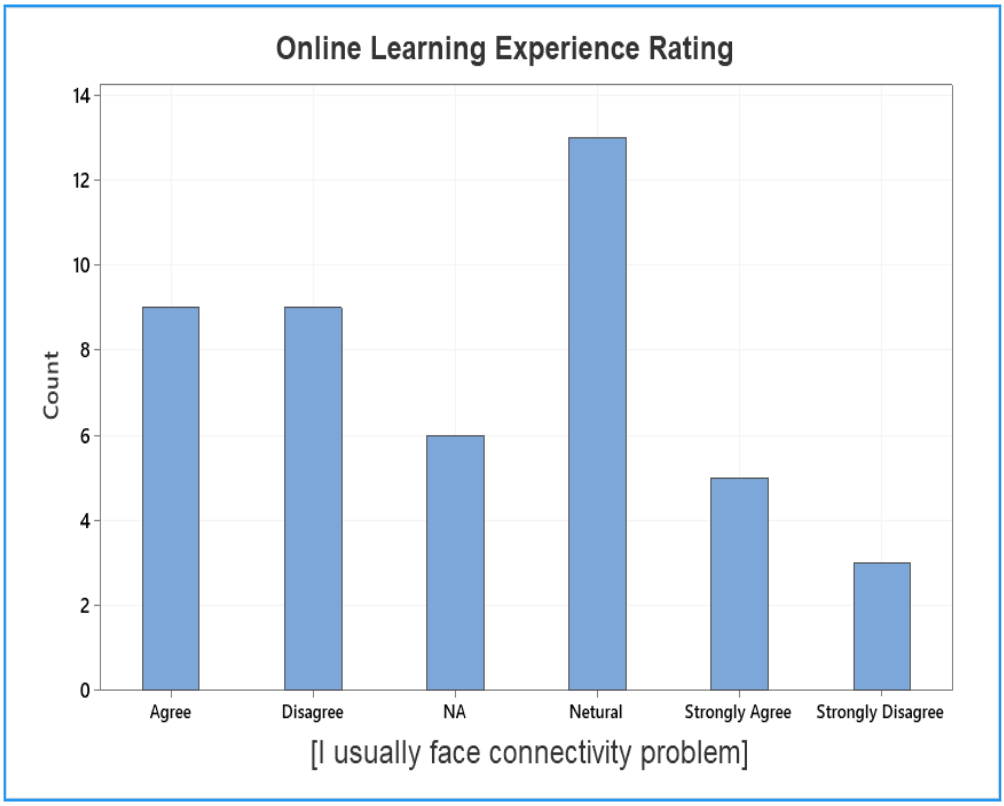


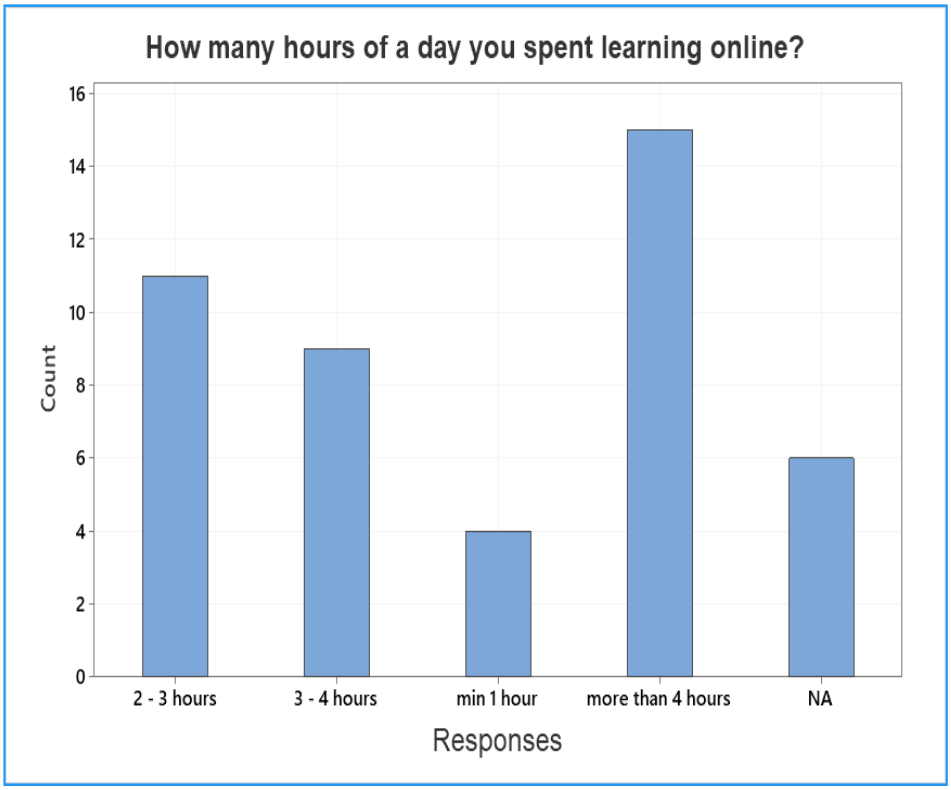

Gender
25
20
15
10
5
0
Count
Female
Male
Responses

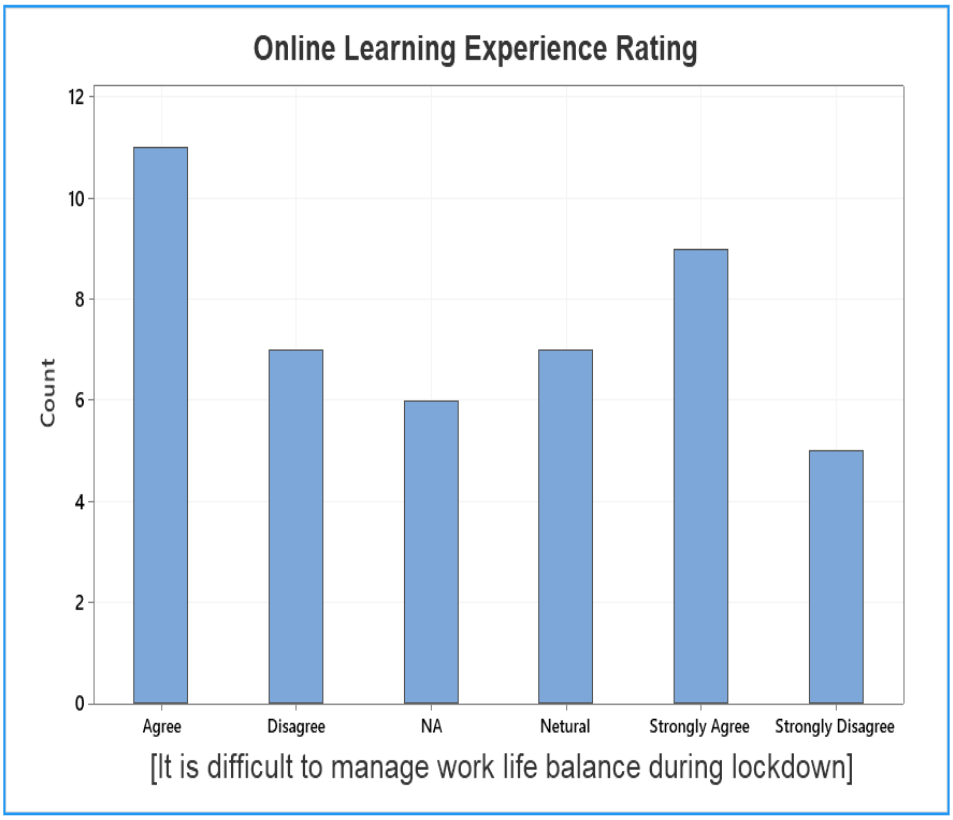

Have you been allotted any online Courses to be completed during lock-down for skill development by institute ?
25
20
15
10
5
0
Count
NA
No
Yes
Responses

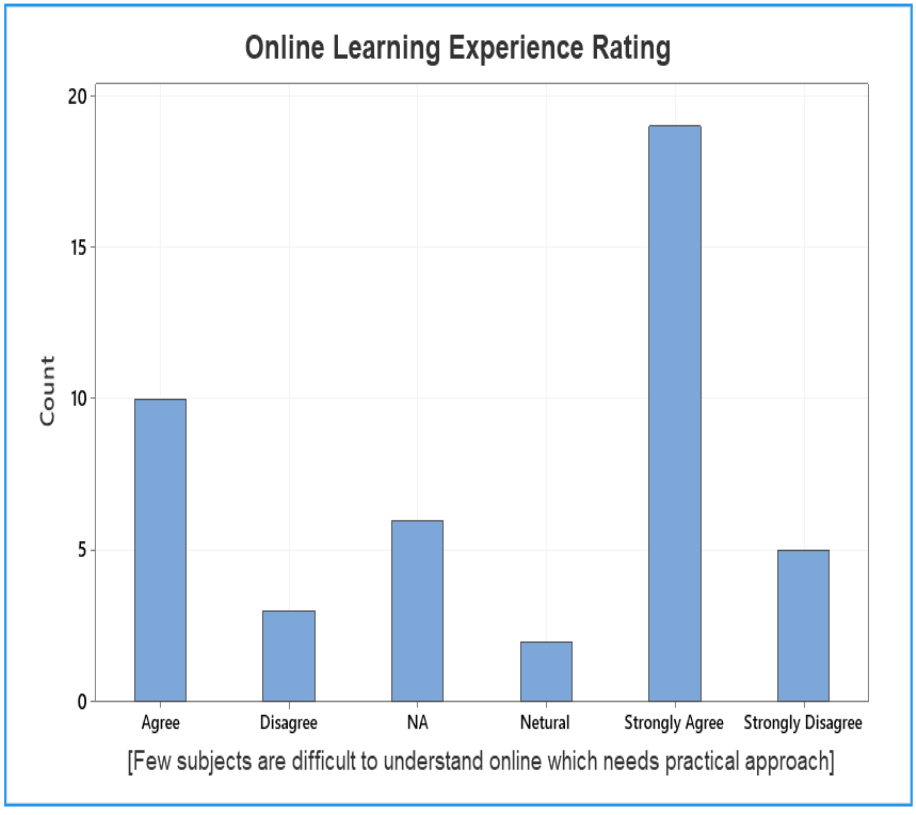

Did your institute arranged online classes during lock-down?
Count
40
30
20
10
0
No
Yes
Responses

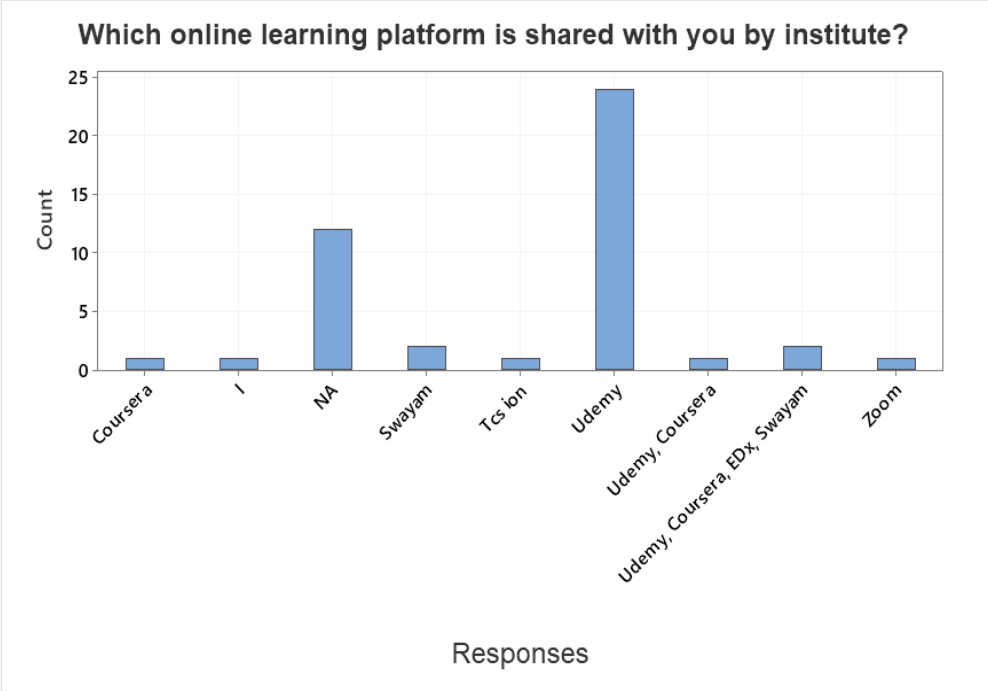

How many courses / subjects are you learning online?
Count
25
20
15
10
5
0
Five - Six
More than Six
NA
One - two
Three - Four
Responses

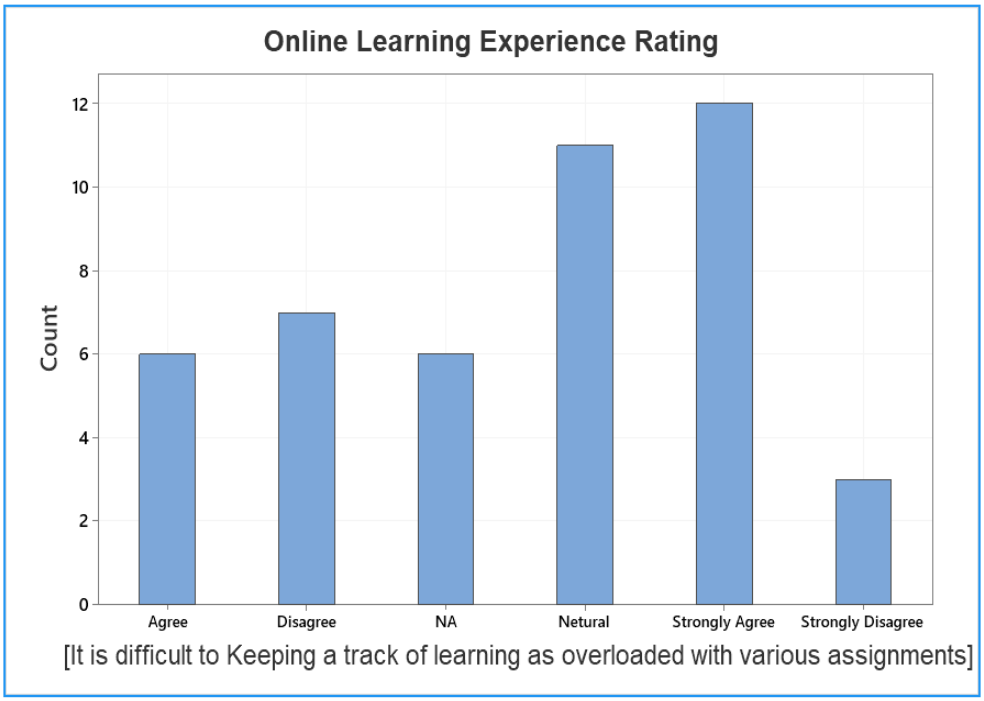

Online Learning Experience Rating
Count
0
2
4
6
8
10
12
14
Agree
Disagree
NA
Netural
Strongly Agree
Strongly Disagree
[I usually face connectivity problem]


How many hours of a day you spent learning online?
Count
0
2
4
6
8
10
12
14
16
2 - 3 hours
3 - 4 hours
min 1 hour
more than 4 hours
NA
Responses

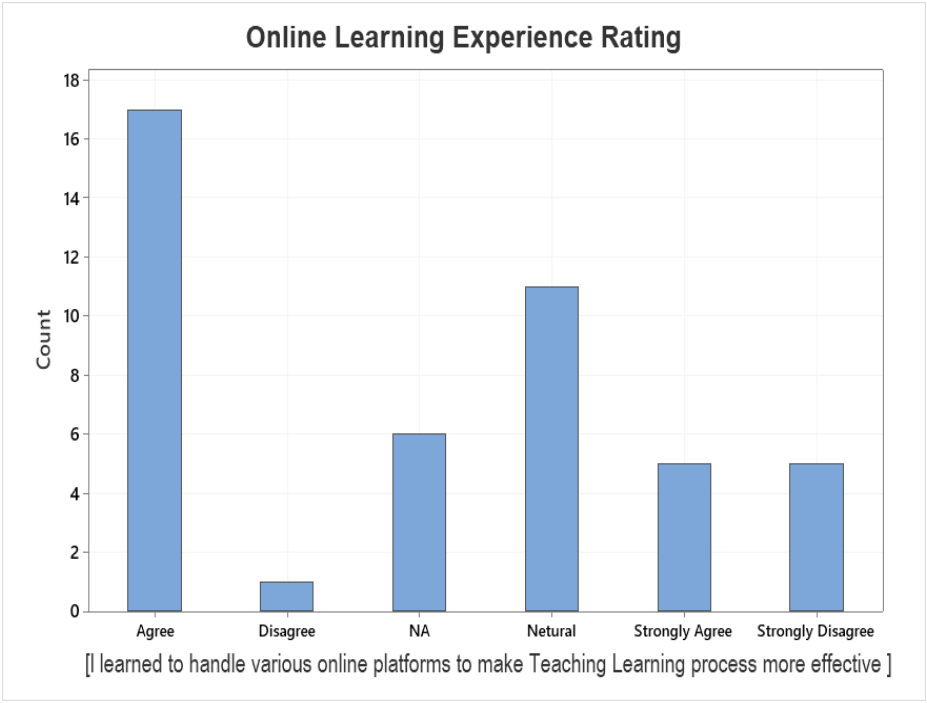

Online Learning Experience Rating
Count
0
2
4
6
8
10
12
Agree
Disagree
NA
Netural
Strongly Agree
Strongly Disagree
[It is difficult to manage work life balance during lockdown]

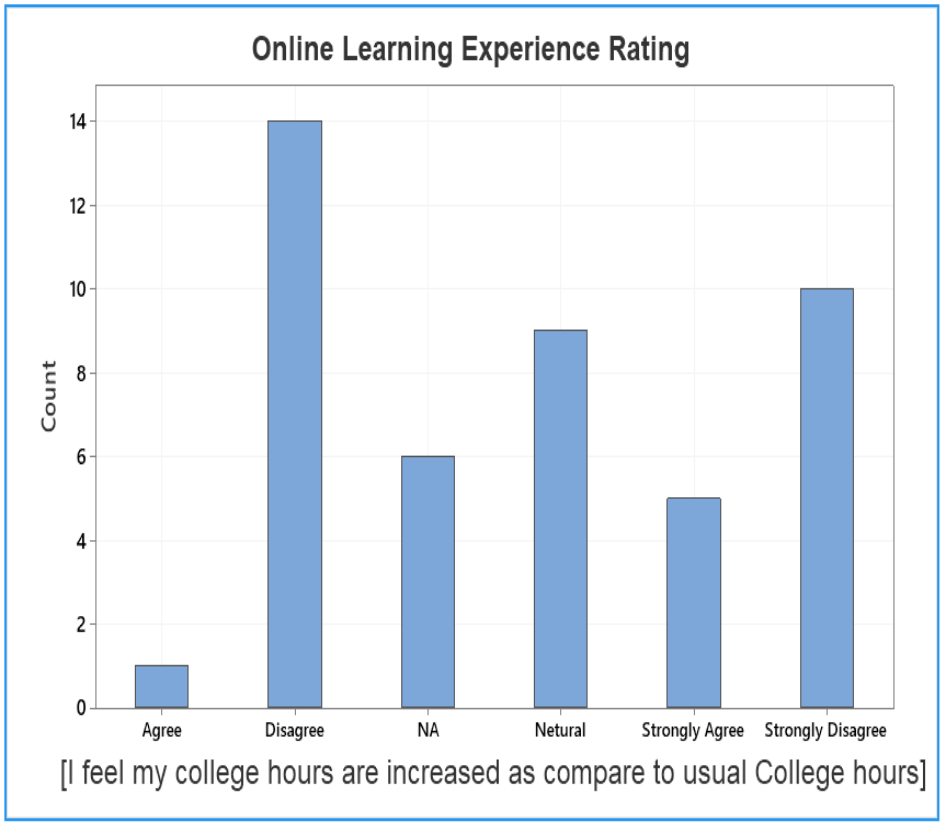

Online Learning Experience Rating
Count
0
5
10
15
20
Agree
Disagree
NA
Netural
Strongly Agree
Strongly Disagree
[Few subjects are difficult to understand online which needs practical approach]

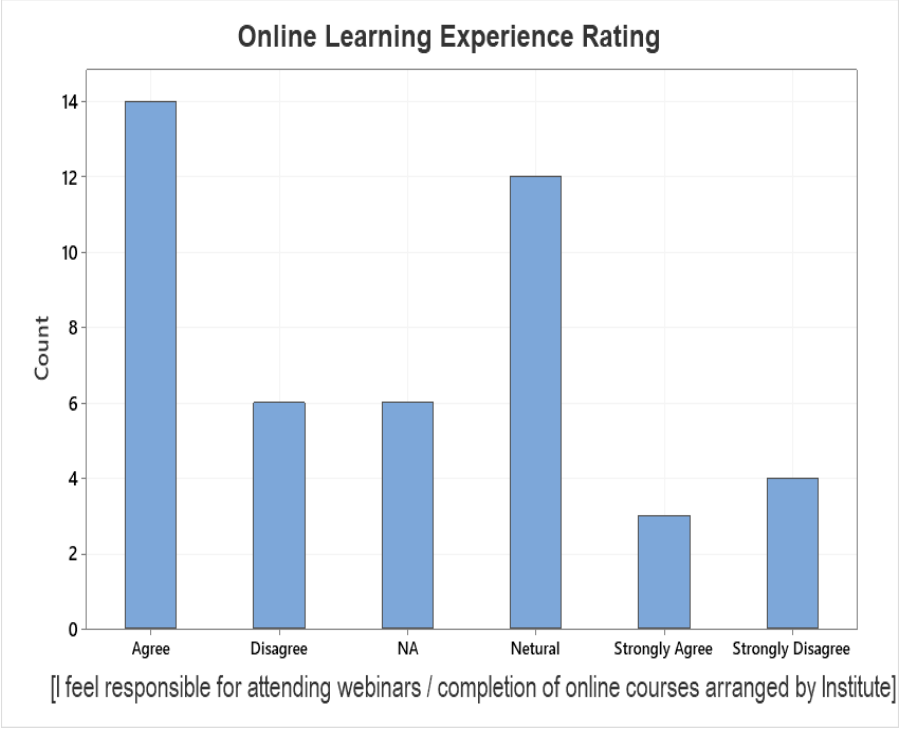

Which online learning platform is shared with you by institute?
Count
25
20
15
10
5
0
Coursera
I
NA
Swayam
Tcs ion
Udemy
Udemy, Coursera
Udemy, Coursera, EDx, Swayam
Zoom
Responses

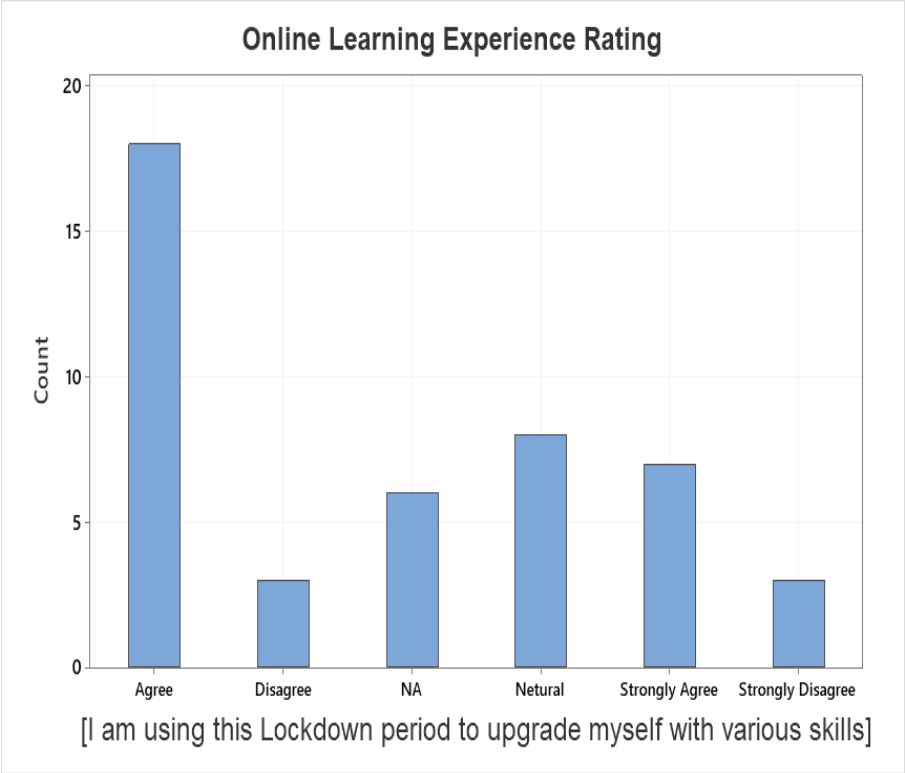

Online Learning Experience Rating
Count
12
10
8
6
4
2
0
Agree
Disagree
NA
Netural
Strongly Agree
Strongly Disagree
[It is difficult to Keeping a track of learning as overloaded with various assignments]

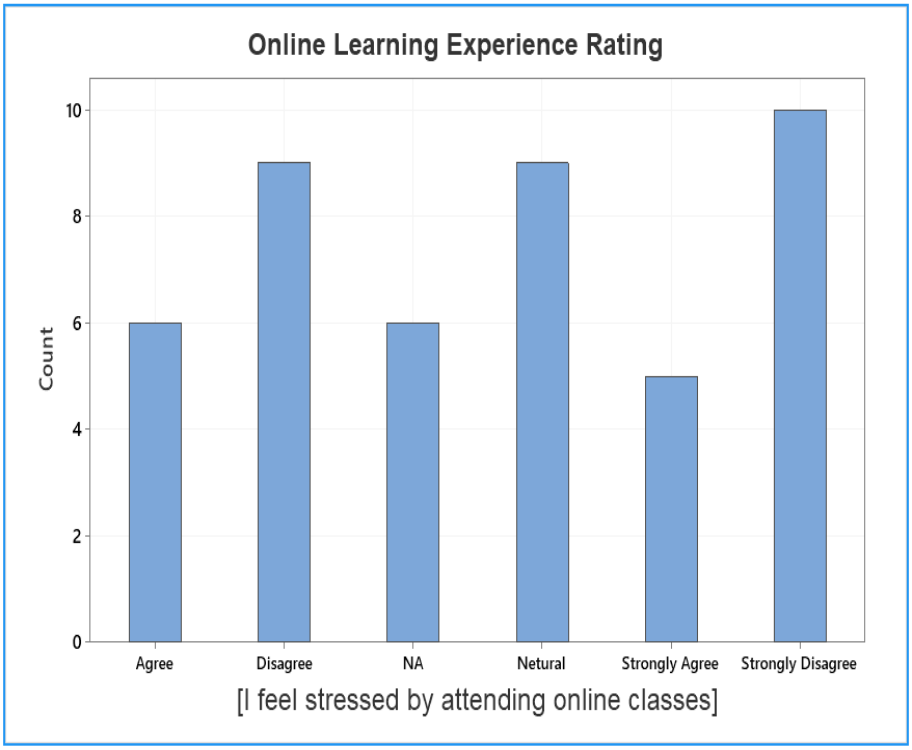

Online Learning Experience Rating
Count
0
2
4
6
8
10
12
14
Agree
Disagree
NA
Netural
Strongly Agree
Strongly Disagree
[Learn from any location is what I am enjoying]

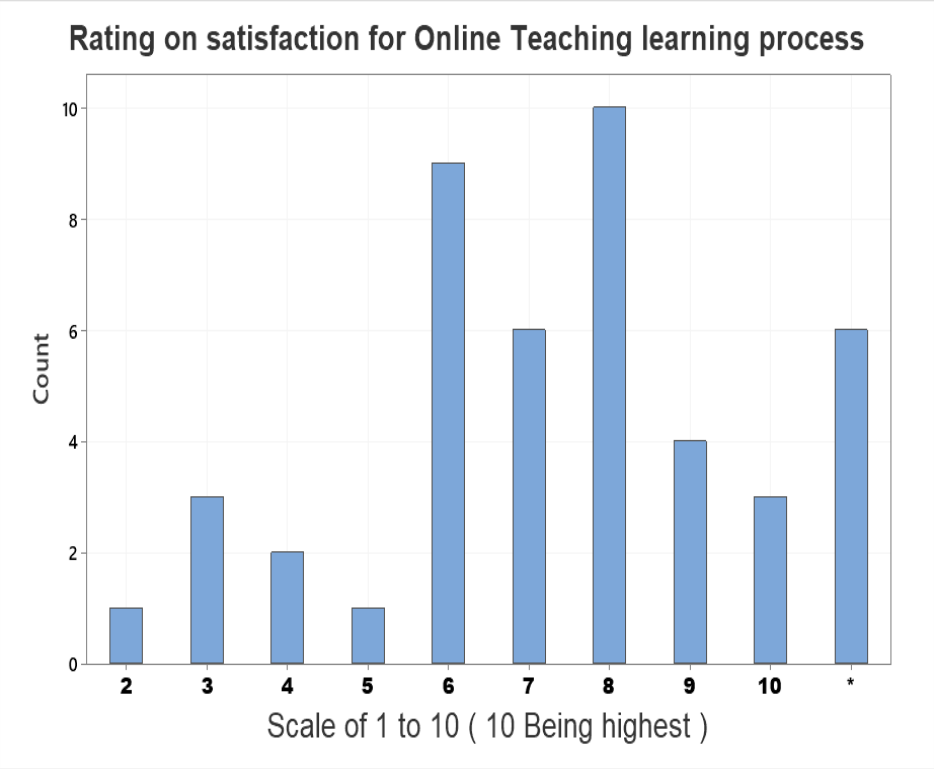

Online Learning Experience Rating
Count
0
2
4
6
8
10
12
14
16
18
Agree
Disagree
NA
Netural
Strongly Agree
Strongly Disagree
[I learned to handle various online platforms to make Teaching Learning process more effective]

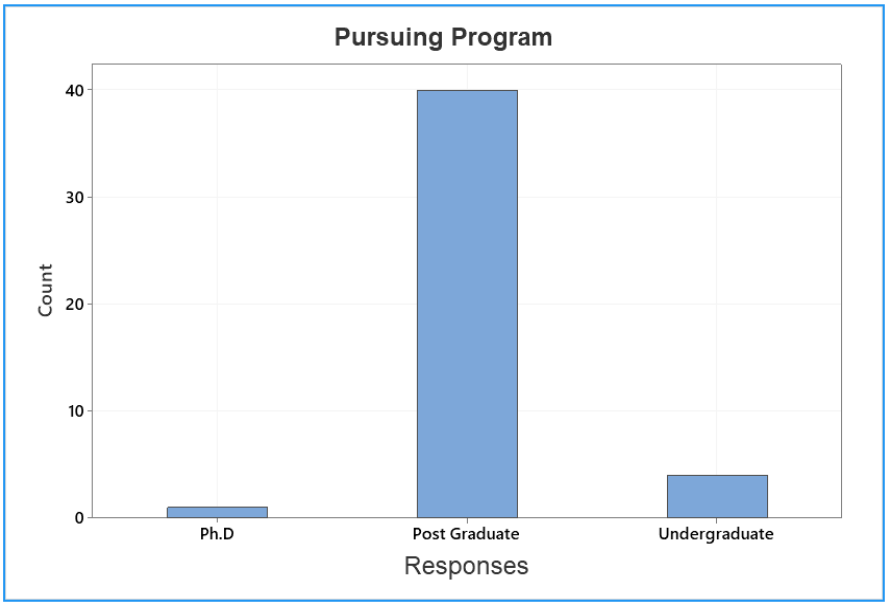

Online Learning Experience Rating
Count
0
2
4
6
8
10
12
14
Agree
Disagree
NA
Netural
Strongly Agree
Strongly Disagree
[I feel my college hours are increased as compare to usual College hours]


Online Learning Experience Rating
Count
0
2
4
6
8
10
12
14
Agree
Disagree
NA
Netural
Strongly Agree
Strongly Disagree
[I feel responsible for attending webinars / completion of online courses arranged by Institute]


Online Learning Experience Rating
Count
20
15
10
5
0
Agree
Disagree
NA
Netural
Strongly Agree
Strongly Disagree
[I am using this Lockdown period to upgrade myself with various skills]


Online Learning Experience Rating
Count
10
8
6
4
2
0
Agree
Disagree
NA
Netural
Strongly Agree
Strongly Disagree
[I feel stressed by attending online classes]


Rating on satisfaction for Online Teaching learning process
Count
0
2
4
6
8
10
2
3
4
5
6
7
8
9
10
*
Scale of 1 to 10 (10 Being highest)


Pursuing Program
Count
0
10
20
30
40
Ph.D
Post Graduate
Undergraduate
Responses

Analysis:

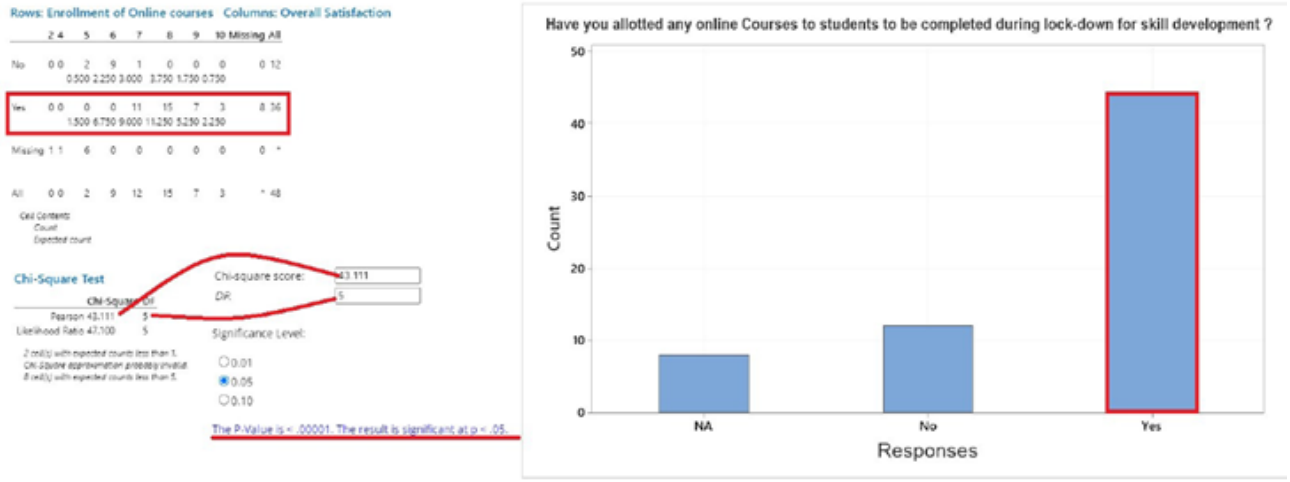
Ho: Various teaching platforms are insignificant

H1: Various teaching platforms are significant

Various platforms are available for online teaching. Table 1 shows the usage of various platforms by teachers during Covid19 in combination and as it can be seen the most preferred platform used for teaching is **zoom.**

A chi-square analysis was performed in Minitab to determine if there is a significance between various platforms used for the teaching-learning process the obtained p-value is 0.001832 $p<0.05$ the result is significant. This indicates that the various platforms used in the teaching-learning process are significant and important. Among these platforms, Zoom is the most widely used and highly popular platform. The

satisfaction of online teaching and learning thus largely depends on the online platforms and their features, ease of use, and the technical support available from time to time.



Analysis:

Ho: Overall satisfaction is independent of the enrollment for online courses

H1: Overall satisfaction is dependent on the enrollment for online courses

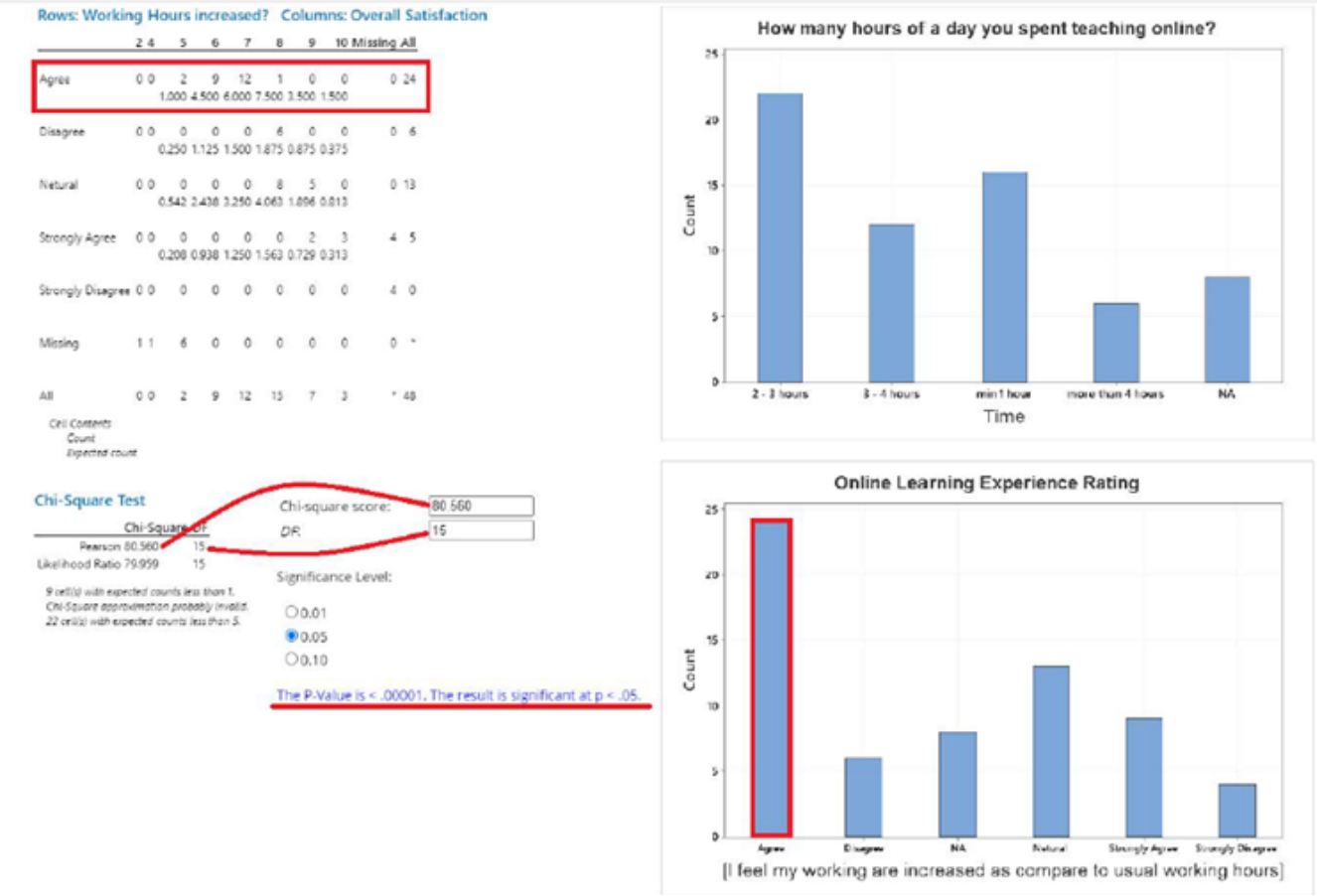
From the chi-square test results applied to the above data, it can be noted that the enrollment for the online courses and the overall satisfaction in the online teaching-learning process are significant at a 5% level of significance as the p-value is nearly 0, resulting in rejection of Ho. This brings to light the importance of online teaching-learning heavily dependent on enrollment in online courses.

Analysis:

Ho: Overall satisfaction is independent of the increased stress levels

H1: Overall satisfaction is dependent on the increased stress levels

The above data, after applying the chi-square test, reveals that the attributes “overall satisfaction” and “the increased stress levels” are dependent on each other. The p-value being nearly 0, resulting in rejection of Ho, is indicating the significance of the attributes at a 5% level of significance. Increased stress levels are going to affect overall satisfaction. The data further indicates that most of the respondents are disagreeing with the fact that online teaching increases the stress level. This is a heartening scenario as technology is indeed aiding the teaching and learning process.



Analysis:

Ho: Overall satisfaction is independent of increased working hours

H1: Overall satisfaction is dependent on increased working hours

The chi-square test has revealed the result after applying to the above data that attributes “increased working hours” and “overall satisfaction” are significantly dependent on each other as a p-value that is nearly 0 is less than or equal to 0.05. Hence the null hypothesis Ho is rejected and the result is significant. Looking at the attributes it can be understood that increased working hours than normal can certainly affect the overall satisfaction. On one side the new online teaching tools are helping and on the other hand, the number of hours has increased beyond normal hours.

In all these chi-square tests, one thing can be noticed that even if the attributes are significantly related or associated with each other, the extent to which they are associated can not be judged. The individual graphs help understand the various nuances of these results.

Conclusion:

The present study highlights the perception and opinion of the faculty members and students towards innovative practices in e-teaching and e-learning during the lockdown period and the Covid 19 pandemic. From the study, it is revealed that the majority of the faculty members and students preferencing for e-teaching and e-learning as it provided very comfortable in the e-learning and e-teaching process. It also provided the students, the freedom to interact with their teachers. The present study shows that in the recent past e-learning and e-teaching have achieved good popularity in the educational sector as teachers and students are found to be inclined towards online learning tools to interact with each other.

The various e-learning and e-teaching platforms are significant & important and depend upon enrollment in the online courses. On one side the new online teaching tools are helping and on the other hand, the number of hours has increased beyond normal hours. In the same way, the Increased stress level is going to affect overall satisfaction.

But still, E-learning and e-teaching are the most accepted and popular modes of education at this time of the Covid pandemic. In future, the virtual or online education may perhaps be an alternative or a parallel system of education.

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