Willingness To Teach Online Post-Pandemic: A Survey Research Among Teaching Faculty In Private Engineering Colleges In Bangalore.

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ABSTRACT

After the COVID-19 virus was introduced to the world, the WHO declared a global pandemic. It affected over 150 countries. To minimize the spread of the virus, schools, offices, and markets were temporarily closed. During the pandemic, many of the lecture sessions were conducted on-line, which caused a surprise for the teaching fraternity and the stack holders. It is with this background the researchers have made an attempt to study the willingness of the Faculty members to teach online Post-pandemic with special emphasis on Faculty in Private engineering colleges in Bangalore. The study was conducted among 144 Faculty members using a mixed-method approach to collect and analyze qualitative and quantitative data. The various phases of the study included: literature search, review, problem formulation, data collection, and analysis. Using SPSS .24 software the collected data was analyzed and the statistical tools applied were Cross Tabulation, Chi-Square tests, Correlation Method and Garrett Ranking Method. Majority of the Teaching Faculty contacted for this survey expressed their readiness to teach online Post-pandemic. This research also highlights two important issues that Teaching Faculty face: Lack of Equipment and Erratic/Unstable Internet Connection. Hence, the respective managements should pay attention to these issues on a priority basis to provide quality teaching to the teaching community.

Key Words: *COVID-19, pandemic, teaching fraternity, stack holders, Post-pandemic*

INTRODUCTION

The rise of the digital era has led to the increasing use of technology in the education sector. This has allowed students and teachers to take advantage of the latest learning techniques. One of the most common examples of technology utilization in the education sector is the use of a learning management system (LMS). This platform allows teachers and students to manage their learning processes. Although online classes are becoming more prevalent in the education sector, they are still partially integrated with traditional classes. Many universities only use an LMS as a course-management system, as there is less interaction between the students and teachers.

After the COVID-19 virus was introduced to the world, the WHO declared a global pandemic. It affected over 150 countries. To minimize the spread of the virus, schools, offices, and markets were temporarily closed.. In response to the situation, the Ministry of Education in India ordered all educational institutions to switch to online courses. The government should have considered the readiness of the lecturers before

implementing the policy. In other countries, the education ministry did not take into account the readiness of the teachers.

During the pandemic, many of the lecture sessions were conducted on-line. This caused a surprise for the teaching fraternity and the stack holders. The management and the teaching community were geared up to make sure that the students and the community were comfortable with the new technology. They also planned on providing all the necessary support to make the online classes successful.

This study aims to find out if instructors are still willing to teach in an online environment following the pandemic. The results of this study are expected to provide a good indication as to how instructors are willing to adopt online learning. They have been using off-line methods for a long time now, and they're used to using chalk and talk. Having the necessary level of commitment to continue teaching after the pandemic will help improve the online learning environment. This will also allow the management to allocate resources more effectively.

Problem Statement

The implementation of an online course required a radical change in the way students and lecturers communicated. Only a few instructors have the necessary experience to deliver online courses. This limitation has led to the development of e-learning programs that are geared toward increasing student participation and motivation. The readiness of the instructors is also a critical factor that can be considered when it comes to implementing an online course. This is because, without the proper understanding of the program's readiness, it can be difficult to successfully implement it. In 2009, a study conducted by **Scherer, R. et.al., (2009)** revealed the quantitative measurement of the effectiveness of online courses in higher education. Unfortunately, the study was not conducted in India.

Research Questions

The goal of this study is to analyze the readiness of teaching faculty members to teach online course Post-pandemic. It also aims to identify the various obstacles that they might be encountered in doing so. This study is guided by the following research questions:

1.   What is the level of acceptance of Technology by the Teaching faculty in conducting online classes Post-pandemic?
2.   What are the readiness levels of Teaching Faculty to conduct online classes Post- pandemic?
3.   What are the requirements of Teaching Faculty for conducting in online teaching?

This research considers whether all the Teaching Faculty have appropriate readiness to conduct online classes post-pandemic.

Objectives of the Study

In order to address the above mentioned research questions, following are the objectives in this study:
1. To study the readiness of Teaching Faculty to conduct online classes Post-pandemic.
2. To understand the expectations of Teaching Faculty for conducting online classes Post-pandemic.
3. To study the Challenges faced by the Teaching Faculty while conducting online sessions.

Literature Review

This section aims to introduce the terms readiness, capabilities, and preparedness, which are defined by the Cambridge Advanced Learner's Dictionary. Readiness is a state of readiness that people are prepared for. Although the terms readiness and preparedness are interchangeably used by experts, the former refers to a state of readiness while the latter refers to a formal preparation for a situation. This concept refers to the willingness and readiness of people to act upon a situation. This study assumes that both terms are interchangeable.

Experts have different definitions of competency. For instance, competency in performing something is the ability to do so well. On the other hand, preparedness is the ability to prepare for something. According to an organization that sets standards for training and performance, competency is a skill or attitude that enables an

individual to perform a given job or function according to the expected standards. To measure e-learning's readiness, experts use various constructs and categories to describe the skills and attitudes that people need to perform their duties.

According to **Kalelioglu et al., (2015),** e-instructors are individuals who have a high level of technology literacy and are capable of teaching in various learning contexts. Aside from having the necessary skills to use technology effectively, an instructor should also be experienced in teaching.

According to Denis et al., there are various competencies that can be categorized into four categories: pedagogical, technological, communicational, and subject expertise. According to **Klein et al. (2004)** these include professional foundations, communication, law and ethics, preparation, instructional methods, questioning, and management. **Smith et al., (2016)** also classify these into four categories: managerial, technical, institutional, and personal. According to them, these include managing the environment and the appropriate use of technology.

The dimensions of a Teaching Faculty's preparedness are linked to how they view their various functions. According to **Guasch et al., (2010)** there are seven categories of functions that a Teaching Faculty can perform. These include planning, design, social function, instructive function, technological domain, and management domain. In addition to being able to present the content, instructors also need the necessary skills and knowledge to use various resources and technologies to facilitate learning.

The study conducted by **Nwagwu (2020)** revealed that the readiness of Nigerian universities to adopt e-learning was influenced by various factors such as funding, training, and ICT equipment. However, it did not find that the readiness of students and human resource was significantly different.

The competence of e-instructors is very important to the success of e-learning projects. They should have the necessary skills and experience to implement blended learning and e-learning courses **Kalelioglu et.al., (2015).** The study revealed that instructors who are experienced in teaching and have advanced skills in using technology are needed to become effective instructors.

In a study conducted by **Ochogo et al., (2016),** on the effects of lecturers' computing competence and readiness for e-learning, researchers found that these factors had a significant influence on the students' performance. The objective of this study was to investigate the effects of institutional support on the training of lecturers in e-learning courses at the University of Nairobi. The study did not find a significant relationship between the readiness of lecturers to teach e-learning and the effectiveness of their existing training program. However, it is noted that their training in software tools had a significant influence on their performance.

The rapid emergence and evolution of the COVID-19 pandemic has caused many schools and universities around the world to transition to e-learning. However, the process of adopting these systems can be challenging (**Mulla, Z.D., et.al., 2020**). The process of transitioning to e-learning involves the complete change of an institution's curriculum and the training of its faculty. This includes the establishment of a new online environment and the migration of the faculty members to the new system (**Lichoro, D.M.,2015**). Even though the transition to e-learning is usually considered to be relatively easy, it can be very time-consuming and can affect the teaching and learning responsibilities of the faculty members.

A study conducted in Russia by **Pokrovskaia et al., (2021)** revealed that the country's e-learning program was implemented during the COVID-19 pandemic. The study used three hypotheses to analyze the implementation of the program. The results of the studies were then used to evaluate the participants' perception of the program.

In order to identify the factors that contributed to the success of e-learning in COVID19, **Alqahtani. et.al., (2020)** conducted a study. They identified five factors that were most important to the success of e-learning. These included the availability of high-quality information technology, support from management, student awareness, and the design of effective e-learning systems. The authors of the study noted that the most important factor that schools should consider when it comes to implementing e-learning is readiness. This is because not having the necessary equipment and support will prevent them from effectively using the technology.

Higher Education

The changes brought about by globalization are affecting various aspects of society and the economy (**Denis, B. et.al., 2004**). They affect the way higher education institutions are organized and operated. For instance, by transforming itself into a marketplace for services, they are able to compete with other institutions (**Furedi, 2010**). Despite the various changes that have occurred in the higher education sector, it is still important that the institutions remain focused on the future. The changes brought about by globalization are mainly focused on four areas: increasing competition, the consumption pattern of education, marketisation, and managerialism. The rapid emergence and evolution of new technologies and the increasing competition in the higher education sector have caused major changes in the way the institutions operate (**Sappey, J. 2005**). These changes require the institutions to continuously adapt to meet the needs of their customers. Due to the increasing competition and the technological advancements that have occurred in the higher education sector, new business models have been created in the field of higher education.

The role of higher educational institutions in the development of the country is very important. They play a vital role in the dissemination of knowledge and helping the country grow economically (**Teir and Zhang, 2016**). As institutions of higher education (HEIs) start treating education as a commodity, they are starting to consider how technology can be used to improve the quality of education. This is done through the development of innovative programs and the establishment of a comprehensive organizational strategy. The traditional system of governance that was established in higher education has been replaced by a modern administrative model that focuses on the needs of the students and the performance of the faculty. This new approach to governance allows the faculty to become the gatekeepers of knowledge that the customers need.

Higher Educational Institutions in India

India's higher education sector has grown significantly since its independence. It is one of the most prominent systems of its kind in the country. The University Grants Commission is the central body that oversees the education system in the country. The Commission for Higher Education has classified various universities into five categories. These include Central University, State University of Delhi, Deemed University of Engineering and Technology, Private University, and Autonomous Institutes. According to the All India Survey for Higher Education, there are over 996 universities, 39931 colleges, and 10725 standalone institutions. Out of these, 298 are privately managed. There are also over 400 universities that are located in rural areas.

In terms of education, India has a vast educational system that is filled with different kinds of students and faculty members. Due to the varying languages and regions in the country, the kind of education that is offered is often unequal. In response to the increasing needs of the country's education system, the government allowed private companies to operate in the field of education (**Gupta, 2008**). This has resulted in the ownership and control of various educational institutions going to private parties. In order to address this issue, various initiatives have been carried out such as the establishment of self-financing colleges and converting the existing aided colleges into such institutions. The privatization of education has been regarded as a radical departure from the socialist ideals of the past (**Kapur et al., 2006**). It has been reported that privatization has led to the over-representation of degree holders in the private sector. This issue also led to the unemployment of millions of people (**Baweja, 2017**).

In 2014, the British Council released a report that stated that there is a huge need for higher education in India. However, there are also various constraints that prevent the country from effectively addressing its higher education needs.

Role of teaching faculty

The goal of educational institutions is to provide quality educational services. The faculty members are the ones who can make these services happen. The Human Resource department is one of the most critical components of an educational institution. It is therefore important that the faculty members are well-equipped to handle the various challenges that come with running a successful organization. Some of these include the increasing competition for high-quality staff, the need for better managerial skills, and the establishment of a strong strategic positioning. Due to the increasing number of students and the complexity of the management of educational institutions, the need for new strategies and procedures has been acknowledged. This has resulted in the formation of organizations that are focused on improving their performance. The people who

are involved in running these organizations are also responsible for their success. According to experts, the quality of the people who work in an educational institution is very important. This is because the interactions they have with their subordinates and the achievements of their colleagues are some of the factors that can determine the success or failure of an organization.

Research Methodology

This study used a mixed-method approach to collect and analyze qualitative and quantitative data. The case study design allowed the researchers to collect data from diverse groups of people. It also represented the various backgrounds and experiences of the lecturers from selected respondents. Through quantitative data, the researchers were able to measure the perceptions of the respondents. They were also able to identify their patterns using qualitative and quantitative data. The findings were then interpreted using logical thinking and deductive reasoning. A study by **Saunders et al. [19]** adopted the philosophy of research mapping, which refers to the use of both quantitative and qualitative methods to extract more useful information. The quantitative method allowed the researchers to complete the study with more holistic findings. It also allowed them to confirm their hypotheses. The use of a mixed-method approach in education-based research has been regarded as reliable and qualified. This method allows the researchers to collect and analyze more reliable data.

Respondents

This study utilized convenience and voluntary sampling techniques. These methods were chosen due to their low cost and the large number of people involved. The study focused on the teaching faculty members who taught engineering courses through online mode. It was conducted in April 2022, when the pandemic was in third wave in the country. The demographic profiles of the study participants were summarized in **Table – 1.** .

The study was conducted to ensure that the data collected were representative of the population. The large number of participants and the good distribution of the data allowed for a robust and adequate representation. There were five disciplines represented. The findings of this study revealed that despite the lack of experience with online teaching environments, many teaching faculties are still eager to teach online.

Research Phases

The objective of the study was to analyze the literature and develop a strategy to improve the quality of research. The various phases of the study included: literature search, review, problem formulation, data collection, and analysis. The literature review and search was carried out using various digital libraries. These included journals related to online learning and safety. The problem was conceptualized by reflecting on the experiences of the researchers while they were facilitating online learning. They also reviewed the literature. The proposed research questions were then analyzed and presented to the study participants. Data collection was carried out online. Qualitative and quantitative data were analyzed.

Research Instrument

The goal of this study was to measure the readiness of instructors. It used two instruments to do so, and it adjusted the questionnaire to improve its quantitative reliability **University of Toledo's (2020).** The study consists of four dimensions: Basic Technical Skill, LMS Experience, Course Planning, Communication, and Design. The instruments were delivered in a questionnaire format. The data collected from the survey were coded, and analysed using appropriate statistical tools.

Results and Discussion

The following sections discuss the findings of the study that investigated the readiness levels of lecturers for conducting online classes during a pandemic. They also talked about their expectations when it comes to participating in online education.

Instrument Reliability and Validity Tests

The validity and reliability tests were performed using the SPSS .24 software. The first step was to test the reliability of the questionnaire's components, while the second step was to confirm its validity. The results of

the test are shown in **Table - 2**. The five metrics that are related to the reliability of the test are: Cronbach's Alpha (CA), **Cronbach's Alpha Based on Standardized Items**, **Corrected Item-Total Correlation**, **Cronbach's Alpha if Item Deleted** and the R-Table. The consistency of the components of the questionnaire is evaluated by the CA value, which ranges from 0 to 1. A higher value indicates that the questionnaire is reliable. If the CA values are above 0.7 or higher, then every item in the questionnaire is considered valid and reliable.

The study assessed the reliability and validity of the various components of the Teaching Faculty questionnaire. The four dimensions of the questionnaire were used to measure the readiness of Teaching Faculty. The reliability of parts of all the four components are greater than the R-Table value.

Quantitative Interpretation of Teaching Faculties' Perspectives

This section aims to provide a comprehensive analysis of the various factors that affect the readiness of Teaching Faculty to teach online.

CROSS TABULATION:

Between Number of Years of Experience and various Skills required for conducting online classes post-pandemic as per the perceptions of Teaching Faculty:

Out of 32 respondents who had teaching experience between 1 and 5 years, 5 respondents Strongly Disagreed, 5 Disagreed, 7 respondents were Neutral, 9 respondents Agreed, and the remaining 6 respondents Strongly Agreed; Out of 28 respondents who had teaching experience between 6 and 10 years, 4 respondents Strongly Disagreed, 8 Disagreed, 7 respondents were Neutral, 5 respondents Agreed, and the remaining 4 respondents Strongly Agreed; Out of 38 respondents who had been teaching for 11 to 15 years, 9 respondents Strongly Disagreed, 10 respondents Disagreed, 3 respondents were Neutral, 5 respondents Agreed, and the remaining 11 respondents Strongly Disagreed and finally, and finally out of the remaining 46 respondents who had been teaching online for more than 15 years, 8 respondents Strongly Disagreed, 5 respondents Disagreed, 3 respondents were Neutral, 22 respondents Agreed, and the remaining 8 respondents Strongly Agreed. The above values are depicted in **Table – 3.**

Based on the above analysis, we can conclude that the majority of those *Agreed* with respect to *Technical Skills* required for conducting online classes post-pandemic and the among them majority have More than 15 Years of teaching experience.

Between Number of Years of Experience and Learning Management System Skill:

Out of 32 respondents who had teaching experience between 1 and 5 years, 5 respondents Strongly Disagreed, 5 Disagreed, 6 respondents were Neutral, 8 respondents Agreed, and the remaining 8 respondents Strongly Agreed; Out of 28 respondents who had teaching experience between 6 and 10 years, 2 respondents Strongly Disagreed, 7 Disagreed, 11 respondents were Neutral, 4 respondents Agreed, and the remaining 4 respondents Strongly Agreed; Out of 38 respondents who had been teaching online for 11 to 15 years, 10 respondents Strongly Disagreed, 6 respondents Disagreed, 7 respondents were Neutral, 6 respondents Agreed, and the remaining 9 respondents Strongly Disagreed and finally, and finally out of the remaining 46 respondents who had been teaching online for more than 15 years, 7 respondents Strongly Disagreed, 6 respondents Disagreed, 3 respondents were Neutral, 20 respondents Agreed, and the remaining 10 respondents Strongly Agreed. The above values are depicted in **Table – 3.**

Based on the above analysis, we can conclude that the majority of those *Agreed* with respect to *Learning Management System Skill* required for conducting online classes post-pandemic and the among them majority have More than 15 Years of teaching experience.

Between Number of Years of Experience and Management & Communication Skills:

Out of 32 respondents who had teaching experience between 1 and 5 years, 5 respondents Strongly Disagreed, 4 Disagreed, 7 respondents were Neutral, 9 respondents Agreed, and the remaining 7 respondents Strongly Agreed; Out of 28 respondents who had teaching experience between 6 and 10 years, 5 respondents Strongly Disagreed, 7 Disagreed, 9 respondents were Neutral, 3 respondents Agreed, and the remaining 4 respondents Strongly Agreed; Out of 38 respondents who had been teaching online for 11 to 15 years, 8 respondents Strongly Disagreed, 10 respondents Disagreed, 3 respondents were Neutral, 6 respondents Agreed, and the

remaining 11respondents Strongly Disagreed and finally, and finally out of the remaining 46 respondents who had been teaching online for more than 15 years, 6 respondents Strongly Disagreed, 7 respondents Disagreed, 3 respondents were Neutral, 21 respondents Agreed, and the remaining 9 respondents Strongly Agreed. The above values are depicted in **Table – 3.**

Based on the above analysis, we can conclude that the majority of those *Agreed* with respect to *Management & Communication Skills* required for conducting online classes post-pandemic and the among them majority have More than 15 Years of teaching experience.

Between Number of Years of Experience and Course Designing Skills:

Out of 32 respondents who had teaching experience between 1 and 5 years, 6 respondents Strongly Disagreed, 4 Disagreed, 8 respondents were Neutral, 9 respondents Agreed, and the remaining 5 respondents Strongly Agreed; Out of 28 respondents who had teaching experience between 6 and 10 years, 2 respondents Strongly Disagreed, 7 Disagreed, 9 respondents were Neutral, 5 respondents Agreed, and the remaining 5 respondents Strongly Agreed; Out of 38 respondents who had been teaching online for 11 to 15 years, 9 respondents Strongly Disagreed, 10 respondents Disagreed, 3 respondents were Neutral, 5 respondents Agreed, and the remaining 11 respondents Strongly Disagreed and finally, and finally out of the remaining 46 respondents who had been teaching online for more than 15 years, 9 respondents Strongly Disagreed, 5 respondents Disagreed, 3 respondents were Neutral, 5 respondents Agreed, and the remaining 11 respondents Strongly Agreed. The above values are depicted in **Table – 3.**

Based on the above analysis, we can conclude that the majority of those *Agreed* with respect to *Course Designing Skill* required for conducting online classes post-pandemic and the among them majority have More than 15 Years of teaching experience.

CHI-SQUARE TESTS:

Test of significant relationship – Between Number of Years of Experience and Various Skills:

The Chi Square statistical method was used to investigate the association between the perceptions of Teaching Faculty with respect to **various Skills** and their **Number of Years of Experience** in teaching. The null hypothesis of the Chi Square test assumes that there is no association between the perceptions of Teaching Faculty with respect to **various Skills** and their **Number of Years of Experience** in teaching. Conclusions and inferences can be derived and generalised to the population based on the findings.

Between Number of Years of Experience and Technical Skills:

H_{01}: *There is no association between the perceptions of the teaching faculty with respect to Technical Skills and their 'Number of years of experience in Teaching.*

H_{a1}: *There is an association between the perceptions of the teaching faculty with respect to Technical Skills and their 'Number of years of experience in Teaching.*

The chi-square test of association value is 24.279[a], and the significance value is .019 at the 95 percent confidence level, as shown in **Table – 4.**. The null hypothesis does not hold true because the significance value (Asymp. Sig = 0.019) is less than our selected significance level (= 0.05). It can be deduced that there is sufficient evidence to demonstrate that there is a substantial association between the perceptions of the teaching faculty with respect to *Technical Skills* and their *'Number of years of experience in Teaching'*.

Between Number of Years of Experience and Learning Management System (LMS) Skills:

H_{02}: There is no association between the perceptions of the teaching faculty with respect to *Learning Management System (LMS) Skills* and their *'Number of years of experience in Teaching'*.

H_{a2}: There is an association between the perceptions of the teaching faculty with respect to *Learning Management System (LMS) Skills* and their *'Number of years of experience in Teaching'*.

The chi-square test of association value is 24.492, and the significance value is .017 at the 95 percent confidence level, as shown in **Table – 4**. The null hypothesis does not hold true because the significance value (Asymp. Sig = 0.017) is less than our selected significance level (= 0.05). It can be deduced that there is sufficient evidence to demonstrate that there is a substantial association between the perceptions of the

teaching faculty with respect to *Learning Management System (LMS) Skills* and their *'Number of years of experience in Teaching'*.

Between Number of Years of Experience and Management & Communication Skills:

H03: There is no association between the perceptions of the teaching faculty with respect to *Management & Communication Skills* and their *'Number of years of experience in Teaching'*.

Ha3: There is an association between the perceptions of the teaching faculty with respect to *Management & Communication Skills* and their *'Number of years of experience in Teaching'*.

The chi-square test of association value is 25.385, and the significance value is .013 at the 95 percent confidence level, as shown in **Table – 4**. The null hypothesis does not hold true because the significance value (Asymp. Sig = 0.013) is less than our selected significance level (= 0.05). It can be deduced that there is sufficient evidence to demonstrate that there is a substantial association between the perceptions of the teaching faculty with respect to ***Management & Communication Skills*** and their ***'Number of years of experience in Teaching'***.

Between Number of Years of Experience and Course Designing Skills:

H04: There is no association between the perceptions of the teaching faculty with respect to ***Course Designing Skills*** and their *'Number of years of experience in Teaching'*.

Ha4: There is an association between the perceptions of the teaching faculty with respect to ***Course Designing Skills*** and their *'Number of years of experience in Teaching'*.

The chi-square test of association value is 32.660[a], and the significance value is .001 at the 95 percent confidence level, as shown in **Table – 4**. The null hypothesis does not hold true because the significance value (Asymp. Sig = 0.001) is less than our selected significance level (= 0.05). It can be deduced that there is sufficient evidence to demonstrate that there is a substantial association between the perceptions of the teaching faculty with respect to ***Course Designing Skills*** and their ***'Number of years of experience in Teaching'***.

CORRELATION ANALYSIS:

Pearson correlation coefficient measures the linear relationship between two or more variables. It calculates the strength and direction defining the degree to which one variable is linearly related to another. Correlation represents the accurate relationship between the variables.

H05: *There is no linear relationship* among all the components of the Teaching Faculties' willingness to teach on line Post-Pandemic.

Ha5: *There is a linear relationship* among all the components of the Teaching Faculties' willingness to teach on line Post-Pandemic.

For testing the above Hypothesis H05, Pearson product-moment correlation coefficients were computed and results are given in Table – 5. It is observed that there exists a positive correlation among all the components, i.e. where the values between Technical Skills and LMS Skills at [r=-.943, n=144, p=.000], Technical Skills and Management & Communication Skills [r=-.972, n=144, p=.000], Technical Skills and Course Designing Skills at [r=-.745, n=144, p=.000], LMS Skills and Management & Communication Skills [r= .930, n=144, p=.000], LMS Skills and Course Designing Skills [r= .714, n=144, p=.000], and Course Designing Skills and Management & Communication Skills [r= .715, n=144, p=.000] were obtained. Therefore, Hypothesis Ha1 was accepted, and we can conclude that 'There is a linear relationship' among all the components of the Teaching Faculties' willingness to teach on line Post-Pandemic.

GARRETT RANKING METHOD:

Ranking of all the *challenges faced by* the Teaching Faculties' to teach on line Post-Pandemic**:**

The Garrett Ranking method has been used to study the ranking of all the *challenges faced by* the Teaching Faculties' to teach on line Post-Pandemic. The method is being explained in detail as below:

Percent Position = 100 (Rij – 0.5)/ Nj, it is the rank given by a respondent for a particular attribute

        where Rij = Rank given for the ith variable by the jth respondent

          Nj = Number of variables ranked by the jth respondent.

The percentage estimate thus obtained is converted into scores using Garrett's Table. The individual scores thus obtained for every attribute is added to calculate the mean of each attribute. The attributes are then ranked according to the mean scores obtained in the descending order.

In **Table - 5** the percentage score for each of the attribute is arrived at and based on this score thus obtained for all the attributes' ranks are being converted into scale values using Henry Garrett Scale Conversion Table. The scale value for the first rank to eighth rank is **80, 67, 60, 53, 47, 40, 33 and 21.**

The score value for each attribute is calculated by multiplying the number of respondents (f) with respective scale values (x). The   scores thus obtained are to be summed up to get the total score for each attribute and the same scores are to be divided by the number of respondents. Using this value, in the descending order, the ranks are to be obtained. The ranking analyses of the challenges faced by challenges faced by the Teaching Faculties' to teach on line Post-Pandemic were carried out and the challenges are thus ranked as given in the Rank column in **Table – 6.**

As per **Table – 7** ranking of the challenges faced by Teaching Faculty in Teaching Online are as follows:
 "*Lack of Equipment*" has been ranked as I, "*Uninterrupted Electricity Supply*" has been ranked as II, "*Erratic/Unstable Internet Connection*" has been ranked as III, "*Lack of Creativity in Teaching*" has been ranked as IV, "*Lack of Proper Evaluation Methods of Students*" has been ranked as V, "*Time Constraint*" has been ranked as VI, "*Lack of Human Touch*" has been ranked as VII and "*Lack of Motivation among Students*" has been ranked as VIII.

CONCLUSION:

This research provides empirical findings on readiness of Teaching Faculty members to conduct online courses. Most lecturers had adequate readiness to conduct online classes Post-pandemic. This research adopted a modified version of Teaching Faculty readiness questionnaire of the University of Toledo (2020). It comprised four parts (dimensions): (1) Technical Skill; (2) LMS Skills (3) Management and Communication Skills, (4) Course Designing Skills. Majority of the Teaching Faculty contacted for this survey expressed their readiness to teach online Post-pandemic. This research also highlights two important issues that Teaching Faculty face: Lack of Equipment and Erratic/Unstable Internet Connection. Hence, the respective managements should pay attention to these issues on a priority basis to provide quality teaching to the teaching community.

Table 1.
Demographic Profile of Teaching Faculty.

	Frequency	Percent
Gender		
Male	88	61.1
Female	56	38.9
Qualification		
Post-Graduation	66	45.8
Ph.D.	78	54.2
Number of Years of Experience		
1 to 5 Years	32	22.2
6 - 10 Years	28	19.4
11 to 15 Years	38	26.4
More than 15 Years	46	31.9
Department/Discipline the respondents belong to		
Computer Science	10	6.9
Electronics & Commn. Engg.	28	19.4
Electrical & Electronics Engg.	18	12.5
Civil Engineering	23	16.0
Information Science & Engg.	24	16.7
Mechanical Engineering	31	21.5
Others	10	6.9
Designation of the Respondents		
Professor	39	27.1
Associate Professor	55	38.2
Assistant Professor	50	34.7
Previous Experience in Online Teaching		
Yes	36	25.0
No	108	75.0
Willing to Teach online courses Post-pandemic		
Yes	121	84.02
No	23	15.98

Table 2.
Reliability and Validity Tests of the
Teaching Faculty Readiness Questionnaire.

	1	2	3	4	5	Conclusion
Technical Skills	0.996	0.996	0.957	0.917	0.1857	Reliable and valid
LMS Experience	0.997	0.997	0.923	0.928	0.1857	Reliable and valid
Management & Communication Skills.	0.997	0.997	0.937	0.923	0.1857	Reliable and valid
Course Design	0.988	0.988	0.737	0.982	0.1857	Reliable and valid

1—CA: Cronbach's Alpha; 2—CASI: Cronbach's Alpha Based on Standardized Items;
3—CITC: Corrected Item-Total Correlation; 4—CAID: Cronbach's Alpha if Item Deleted

Table – 3
Cross Tabulation
Number of Years of Experience and All Four Skills

		1	2	3	4	5	Total
	Technical Skills						
1).	1 to 5 Yrs	5	5	7	9	6	32
	6 - 10 Yrs	4	8	7	5	4	28
	11 to 15 Yrs	9	10	3	5	11	38
	More than 15 Yrs	8	5	3	22	8	46
	Total	26	28	20	41	29	144
	Learning Management System (LMS) Skills						
2).	1 to 5 Yrs	5	5	6	8	8	32
	6 - 10 Yrs	2	7	11	4	4	28
	11 to 15 Yrs	10	6	7	6	9	38
	More than 15 Yrs	7	6	3	20	10	46
	Total	24	24	27	38	31	144
	Management & Communication Skills						
3).	1 to 5 Yrs	5	4	7	9	7	32
	6 - 10 Yrs	5	7	9	3	4	28
	11 to 15 Yrs	8	10	3	6	11	38
	More than 15 Yrs	6	7	3	21	9	46
	Total	24	28	22	39	31	144
	Course Designing Skills						
4).	1 to 5 Yrs	6	4	8	9	5	32
	6 - 10 Yrs	2	7	9	5	5	28
	11 to 15 Yrs	9	10	3	5	11	38
	More than 15 Yrs	9	5	2	23	7	46
	Total	26	26	22	42	28	144

1 – Strongly Disagree, 2 – Disagree, 3 – Neutral, 4 – Agree,
5 – Strongly Agree.

Table – 4
Chi-Square Tests

	Value	'df'	Asymp. Sig. (2-sided)
Technical Skills			
Pearson Chi-Square	24.279[a]	12	.019
Likelihood Ratio	24.081	12	.020
Linear-by-Linear Assn.	.528	1	.468

a. 2 cells (10.0%) have expected count less than 5.
b. The minimum expected count is 3.89.

	Value	'df'	Asymp. Sig. (2-sided)
Learning Management System (LMS) Skills			
Pearson Chi-Square	24.492[a]	12	.017
Likelihood Ratio	24.017	12	.020
Linear-by-Linear Assn.	.273	1	.601

a.   2 cells (10.0%) have expected count less than 5.
b.   The minimum expected count is 4.67.

	Value	'df'	Asymp. Sig. (2-sided)
Management & Communication Skills			
Pearson Chi-Square	25.385[a]	12	.013
Likelihood Ratio	25.097	12	.014
Linear-by-Linear Assn.	.690	1	.406

a. 3 cells (15.0%) have expected count less than 5.
b. The minimum expected count is 4.28.

	Value	'df'	Asymp. Sig. (2-sided)
Course Designing Skills			
Pearson Chi-Square	32.660[a]	12	.001
Likelihood Ratio	32.984	12	.001
Linear-by-Linear Assn.	.293	1	.588

a. 2 cells (10.0%) have expected count less than 5.
b. The minimum expected count is 4.28.

Table – 5
Correlations

		Technical Skills.	LMS Skills.	Mgmnt. & Commn. Skills.	Course Designing Skills.
Technical Skills	Pearson Corln.	1	.943[**]	.972[**]	.745[**]
	Sig. (2-tailed)		.000	.000	.000
LMS Skills	Pearson Corln.	.943[**]	1	.930[**]	.714[**]
	Sig. (2-tailed)	.000		.000	.000
Mgmnt. & Commn. Skills.	Pearson Corln.	.972[**]	.930[**]	1	.715[**]
	Sig. (2-tailed)	.000	.000		.000
Course Designing Skills	Pearson Corln.	.745[**]	.714[**]	.715[**]	1
	Sig. (2-tailed)	.000	.000	.000	
**. Correlation is significant at the 0.01 level (2-tailed).					

Table - 6.
Percentage Position of all the *challenges faced by* the
Teaching Faculties' to teach on line Post-Pandemic and
their corresponding Garett Table Values.

Rank	Percentage Position		Garett's Table Value
1	100(1-0.5)/8	6.25	80
2	100(2-0.5)/8	18.75	67
3	100(3-0.5)/8	31.25	60
4	100(4-0.5)/8	43.75	53
5	100(5-0.5)/8	56.25	47
6	100(6-0.5)/8	68.75	40
7	100(7-0.5)/8	81.25	33
8	100(8-0.5)/8	93.75	21

Table - 7.
Raw and Calculated Ranking of the Challenges
faced by Teaching Faculty in Teaching Online.

Challenges	1 80	2 67	3 60	4 53	5 47	6 40	7 33	8 21	Total	Calculated Value	Rank
1	(22) 1760	(18) 1206	(18) 1080	(26) 1378	(28) 1316	(10) 400	(8) 264	(14) 294	7698	53.46	2
2	(20) 1600	(22) 1474	(20) 1200	(22) 1166	(14) 658	(8) 320	(12) 396	(26) 546	7360	51.11	3
3	(20) 1600	(32) 2144	(12) 720	(16) 848	(12) 564	(26) 1040	(22) 726	(4) 84	7726	53.65	1
4	(14) 1120	(16) 1072	(18) 1080	(20) 1060	(22) 1034	(24) 960	(24) 792	(6) 126	7244	50.31	4
5	(24) 1920	(20) 1340	(18) 1080	(8) 424	(10) 470	(12) 480	(26) 858	(26) 546	7118	49.43	5
6	(24) 920	(6) 402	(24) 1440	(14) 742	(16) 752	(18) 720	(20) 660	(22) 462	7098	49.29	6
7	(14) 1120	(16) 1072	(18) 1080	(20) 1060	(22) 1034	(24) 960	(8) 264	(22) 462	7052	48.97	7
8	(6) 480	(14) 938	(16) 960	(18) 954	(20) 940	(22) 880	(24) 792	(24) 504	6448	44.78	8

1 - Erratic/Unstable Internet Connection, 2 - Uninterrupted Electricity Supply, 3 - Lack of Equipments,
4 - Lack of Creativity in Teaching, 5 - Lack of Proper Evaluation Methods of Students, 6 - Time Constraint,
7 - Lack of Human Touch, 8 - Lack of Motivation among Students.
Figures in parenthesis indicate the number of respondents.

REFERENCES:

1. Alqahtani, A.Y., Rajkhan, A.A. (2020), E-learning critical success factors during the covid-19 pandemic: A comprehensive analysis of e-learning managerial perspectives. Educ. Sci. 2020, 10, 216. [CrossRef]

2. Beaudoin, M.; Kurtz, G.; Jung, I.; Suzuki, K.; Grabowski, B.L. (2013), Online Learner Competencies: Knowledge, Skills, and Attitudes for Successful Learning in Online Settings; IAP: Charlotte, NA, USA, 2013; ISBN 1623964024.

3. Denis, B., Watland, P., Pirotte, S., Verday, N., (2004), Roles and competencies of the e-tutor. In Proceedings of the Networked Learning 2004: A Research Based Conference on Networked Learning and Lifelong Learning: Proceedings of the Fourth International Conference; Lancaster University: Lancaster, UK, 2004; pp. 150–157.

4. Frank Furedi (2010), The marketization of higher education and the student as consumer, Routledge Publisher, Publication date 4-10-2010, Book Pages 15-22

5. Gulbahar, Y.; Kalelioglu, F. (2015), Competencies for e-Instructors: How to qualify and guarantee sustainability. Contemp. Educ. Technol. 2015, 6, 140–154. [CrossRef]

6. Guasch, T., Alvarez, I., Espasa, A. (2010), University teacher competencies in a virtual teaching/learning environment: Analysis of a teacher training experience. Teach. Teach. Educ. 2010, 26, 199–206. [CrossRef]

7. Gulbahar, Y.; Kalelioglu, F., (2015), Competencies for e-Instructors: How to qualify and guarantee sustainability. Contemp. Educ. Technol. 2015, 6, 140–154. [CrossRef]

8. Kapur, D., & Mehta (2006), The Indian Parliament as an Institution of Accountability. 1, Beijing Law Review, Volume 9, No. 5, October 25, 2018

9. Klein, J.D.; Spector, J.M.; Grabowski, B.L.; de la Teja, I., (2004), Instructor Competencies: Standards for Face-to-Face, Online, and Blended Settings; IAP: Charlotte, NA, USA, 2004; ISBN 160752886X

10. Kripa Shanker Gupta (2008), A comparative analysis of knowledge sharing climate First published: 22 July 2008. https://doi.org/10.1002/kpm.309

11. Lichoro, D.M. (2015), Faculty Preparedness for Transition to Teaching Online Courses in the Iowa Community College Online Consortium; Iowa State University: Ames, IA, USA, 2015.

12. Mulla, Z.D.; Osland-Paton, V.; Rodriguez, M.A.; Vazquez, E.; Plavsic, S.K. (2020), Novel coronavirus, novel faculty development programs: Rapid transition to eLearning during the pandemic. J. Perinat. Med. 2020, 48, 446–449. [CrossRef]

13. Mulla, Z.D.; Osland-Paton, V.; Rodriguez, M.A.; Vazquez, E.; Plavsic, S.K. (2020), Novel coronavirus, novel faculty development programs: Rapid transition to eLearning during the pandemic. J. Perinat. Med. 2020, 48, 446–449. [CrossRef]

14. Nwagwu, W.E. (2020), E-learning readiness of universities in Nigeria-what are the opinions of the academic staff of Nigeria's premier university? Educ. Inf. Technol. 2020, 25, 1343–1370. [CrossRef]

15. Ochogo, N.K., Rambo, C.M., Mbwesa, J.K. (2016), Influence of Computing Competence on Lecturers' Preparedness for E-Learning at the University of Nairobi, Kenya. Bus. Educ. Accredit. 2016, 8, 53–68.

16. Pokrovskaia, N.N.; Leontyeva, V.L.; Ababkova, M.Y.; Cappelli, L.; D'Ascenzo, F. (2021) Digital Communication Tools and Knowledge Creation Processes for Enriched Intellectual Outcome—Experience of Short-Term E-Learning Courses during Pandemic. Future Internet 2021, 13, 43. [CrossRef]

17. Scherer, R.; Howard, S.K.; Tondeur, J.; Siddiq, F. (2020), Profiling teachers' readiness for online teaching and learning in higher education: Who's ready? Comput. Human Behav. 2020, 118, 106675. [CrossRef]

18. Smith and Lynch (2016), Readiness for school reform. Int. J. Innov. Creat. Chang. 2016, 2, 1–12.

19. Sappey, J. (2005), The Commodification of Higher Education: Flexible Delivery and its Implications for the Academic Labour Process. Conference of the Association of Industrial Relations Academics of Australia and New Zealand, Sydney University, Sydney

20. Saunders, M.; Lewis, P.; Thornhill, A. (2009), Research Methods for Business Students; Prentice Hall: New York, NY, USA, 2009.

21. Teir and Zhang, (2016), Analysis of Human Resources Management Practices in Higher Education Institutions: A Study on Kazakh Universities, Academy of Strategic Management Journal, Vol: 20 Issue: 2S.

22. University of Toledo (2020), University of Toledo Faculty Online Teaching Readiness Survey. Available online: http://www.utdl.edu/lv/assessments/ faculty_readiness.html (accessed on 30 December 2020).

23. Walter, E. Cambridge (2008), Advanced Learner's Dictionary; Cambridge University Press: Cambridge, UK, 2008; ISBN 3125179882