

Perception of Online Training among Teachers in India: - A study of NMEICT T10kT Programme.

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Abstract: This research paper presents the perception of Online Training among Indian teachers. With improving internet penetration and affordability the relevance and prevalence of online training is gaining momentum in India. Perception studies with reference to the online trainings are sparse in the Indian context. For the purpose of study data was collected from 437 respondents who have participated in the NMEICT T10kT workshops. Snowball sampling approach was deployed to reach out to the respondents. Data was collected through google forms/telephonic interviews. The respondents were primarily college and university teachers of technical education courses. The perception was measured for six variables. Results indicate preference for some variables with reference to online trainings among the respondents.

Index Terms – ICT, NMEICT, T10KT, e-learning

I. INTRODUCTION

The development of computers and the internet in the latter half of the 20th century led to an increase in e-learning resources and delivery strategies (Stick & Ivankova, 2004) (Hill et al., 1997) (Swaggerty & Broemmel, 2017) 08/02/2023 12:35:00 PM. People were able to have computers in their homes because of the invention of the first MAC in the 1980s, which made it simpler for people to study about specific subjects and hone particular skill sets (Esposito & Mastroianni, 1998). Furthermore, with improvement in affordability and accessibility, online trainings started to flourish and are becoming a new normal.

Online Training refers to a process for teaching or delivering education with the aid of Information Technology (Berechet & Istrimschi, 2014). In order to give education to many recipients simultaneously or at different times, e-learning is also known as a network-enabled transfer of skills and knowledge (Hubackova, 2015).

The Indian government has been keen in implementing digital changes that might significantly boost the development of the eLearning sector. . On its website, the Ministry of Electronics and Information Technology (MeitY) states that one of the most important resources for delivering education is eLearning. The government has been providing financial support for R&D initiatives for various educational institutions in the field of eLearning, content creation, faculty training, R&D/technology development projects, and human resource development.

Towards the direction The National Mission on Education through Information and Communication Technology (NMEICT) was founded with the objective of maximizing the value of ICT in the teaching and learning process for all students in higher education institutions, regardless of location or time (Singh, 2017). In order to increase the Gross Enrolment Ratio (GER) in Higher Education by 5 percentage points throughout the XI Five Year Plan period, this was anticipated to be a significant intervention. The Mission, which the Ministry of Human Resource Development (MHRD), Government of India, began in 2009, is a historic endeavor with the goal of seamlessly delivering high-quality educational content to all qualified and motivated learners in India. The objective is to meet all of the educational and learning demands of students, teachers, and others.

As a part of the mission IIT Bombay launched the "Train 1000 Teachers" Programme in 2009. Funded under the umbrella of NMEICT, the major goal of this Programme is to collaborate with national engineering colleges to improve faculty teaching abilities in foundational engineering and science courses. To truly reach and engage a huge number of teachers, and via them, a much greater number of students, it uses an ICT enabled approach incorporating both synchronous and asynchronous mode. This Programme was expanded in 2013 to train as many as 10,000 teachers at once using 385 established Remote Centers located all over India. The "Train 10,000 Teachers" (T10kT) initiative makes use of the Amrita University-developed AVIEW framework, which offers an online social environment for interactive e-learning as well as communication and interaction with individuals in various locations (Atrey et al., 2016). It is utilised to provide and transmit all RCs with live lectures delivered by IIT faculty.

II. RATIONALE OF STUDY:

It is evident that the Online education is going to play a pivotal role in the teaching learning process. However, the efficacy of any online teaching activity depends on multiple factors which can be categorized into technical and non-technical. It is very critical for the stakeholders to be sensitized the factors influencing the process. This becomes more relevant as the governments and private players are contemplating huge investments in creating the content, systems and infrastructure for online education and training. Since the T10KT Programme is unique and presently on the only such online training activity in terms of scalability and participation. Furthermore, the availability of contact details of the participants makes it more appropriate for such kind of study.

III. RESEARCH METHODOLOGY:

For the purpose of the study a questionnaire instrument was designed, same was administered to the respondents via online and offline mode. Although the response rate with the online group was low, however it still counted to more than 90% of the total respondents. The questionnaire instrument was designed to collect the data for the six chosen variables with respect to the perception of teachers regarding online training. The variables are as under.

- 1) Training Outcomes in comparison to offline teaching.
- 2) Comfort level of the participants.
- 3) Willingness among teachers to teach online.
- 4) Preference of online over offline training Programmes.
- 5) Accessibility.
- 6) Acceptance.

The questionnaire was designed to measure perception with reference to the above-mentioned factors using the five-point Likert scale with 1 as “**Strongly agree**” to 5 as “**Strongly disagree**”. The online version of the questionnaire was developed using the Google forms. Three two thousand respondents were chosen on the basis of convenient sampling. However, the big limitation was regarding the sharing of questionnaire link with the respondents as all the available email services allowed a maximum two hundred recipients in one go.

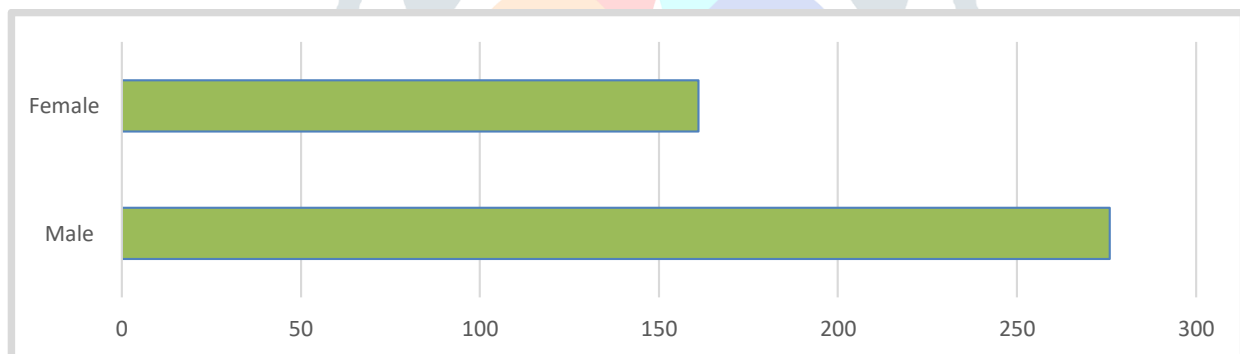
To address the limitation **MailChimp** service was used to share the questionnaire link with the participants in one go through their E-mail id’s available on the NMEICT website. Three hundred and ninety-six responses were received within the fifteen days which set the expiry for the collection of responses. The remaining forty-one responses were recorded in the offline mode. The respondents belonged to all the areas of technical education i.e. Engineering, Management and Computer Applications. The respondent demographics are as under.

IV Respondent Demographics

Table 1: - Male/Female Ratio of the Respondents

S.No	Sex	Number	Percentage
1	Male	276	63.16
2	Female	161	36.84

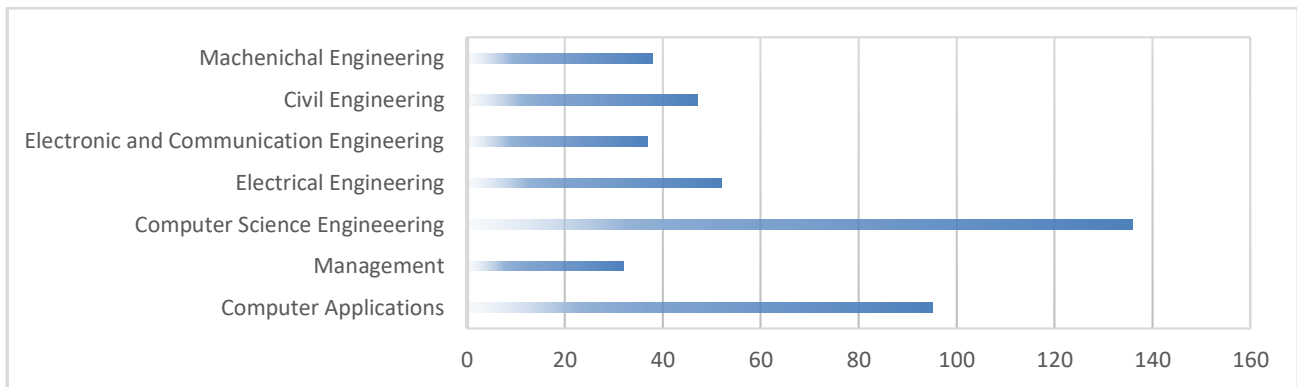
Fig 1: - Male/Female Ratio of the Respondents



Although a good number of the respondents are from Computer applications and Computer Science Engineering background, this is primarily because of the fact the almost more than half of T10KT programs were related to computer science or related themes. This gives another dimension to this study as majority of the respondents are not likely have to have any issues with the knowhow of online environment. The demographics of the respondents with respect to their area as under are as under

Table 2: - Subject wise distribution of Respondents

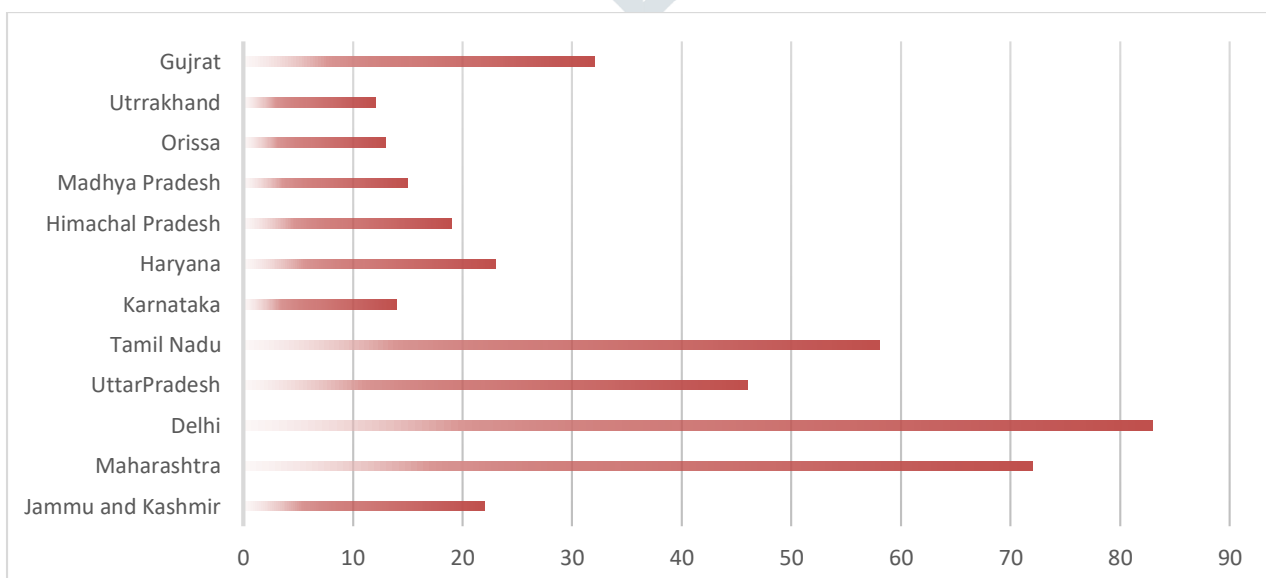
S.no	Subject	No	Percentage
1	Computer Applications	95	21.74
2	Management	32	7.32
3	Computer Science Engineering	136	31.12
4	Electrical Engineering	52	11.90
5	Electronic and Communication Engineering	37	8.47
6	Civil Engineering	47	10.76
7	Mechanical Engineering	38	8.70

Fig2: - Subject wise distribution of Respondents

The respondents belonged to the thirteen states of India. The details reveal the fact that there were only few states left in the study. Particularly North East part of the country has no representation in the study. The cause may be the smaller number of participants from north-east in the T10KT programs. The details are as under.

Table 3: - Area wise distribution of Respondents

S.No	State	Number	Percentage
1	Jammu and Kashmir	22	5.03
2	Maharashtra	72	16.48
3	Delhi	83	18.99
4	Uttar Pradesh	46	10.53
5	Tamil Nadu	58	13.27
6	Karnataka	14	3.20
7	Haryana	23	5.26
8	Himachal Pradesh	19	4.35
9	Madhya Pradesh	15	3.43
10	Orissa	13	2.97
11	Uttarakhand	12	2.75
12	Gujrat	32	7.32
13	Rajasthan	28	6.41

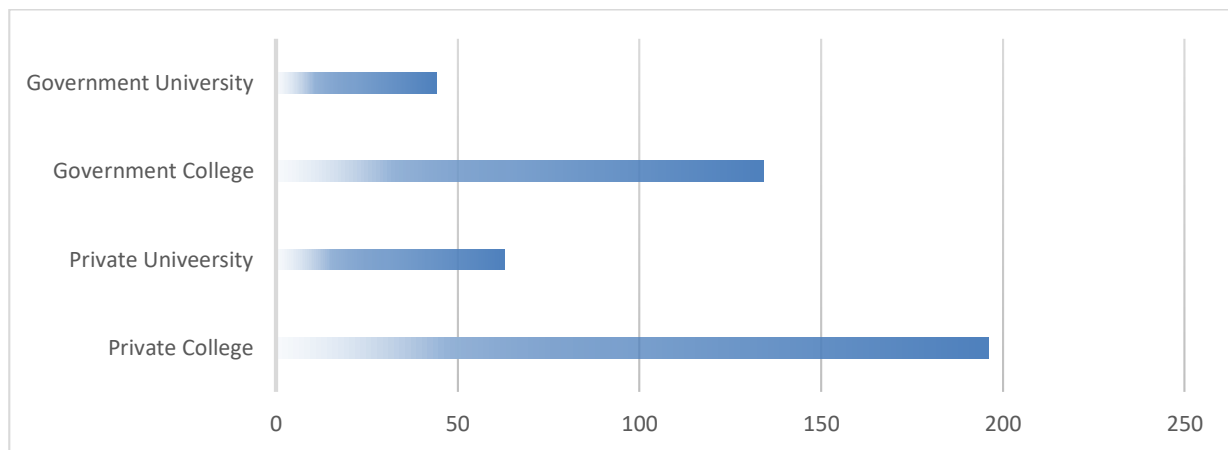
Fig 3: - Area wise distribution of Respondents

The respondents were from Government and Private colleges and Universities. The majority of the respondents belonged to the private colleges. The distribution is as under

Table 4: - Institution wise distribution of Respondents

S.No	Institution Type	No
1	Private College	196
2	Private University	63
3	Government College	134
4	Government University	44

Fig 4: - Institution wise distribution of Respondents



V Questionnaire Design: -

Apart from demographic information the questionnaire was designed to collect data for each of the factors chosen for the study. Four question statements were compiled for each of the six factors where respondents were supposed to respond on the five-point Likert scale with 1 as “**Strongly agree**” to 5 as “**Strongly disagree**”. The statements for the factors are as under.

Variable 1	Statements
Training Outcomes in comparison to offline teaching.	I believe that Online Training Courses Fully achieve the desired objectives?
	I will participate in the same training course in offline mode if offered?
	I will participate in the advanced level of the course in online mode if offered?
	I have the fair clarity of the concepts taught in the online course

Variable 2	Statements
Comfort level of the participants.	I had the fair comfort level with the online mode of teaching.
	If planned properly online trainings can never result in fatigue among participants.
	Participating in online training never causes any level of anxiety in me.
	I don't believe comfortability issues will be a cause of not participating in the online course.

Variable 3	Statements
Willingness among teachers to teach online.	I would love to teach online if offered.
	I am planning to teach some part of my courses in online mode.
	I am willing to invest a bit to enable by self to teach in online mode.
	I will spare time to get trained to teach via online mode

Variable 4	Statements
Preference of online over offline training Programmes.	I will prefer online training programs over offline training programs.
	I will encourage my colleagues to prefer online training over offline training.
	If invited as an expert to deliver lecture in training program, I will prefer online mode.
	I will advise my institution to prefer offering online training program over offline program

Variable 4	Statements
Accessibility.	Online Training Programs are much accessible as compared to offline programs.
	It is very easy to find the online training programs for the topic of your choice.
	It is very easy to get the permission from my employer to register for the online training.
	Quality training programs with renowned experts are more accessible via online mode.

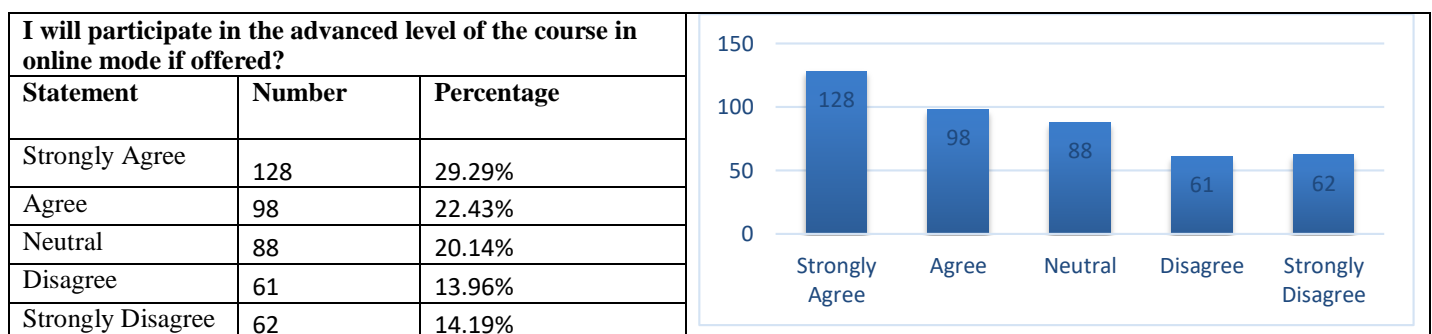
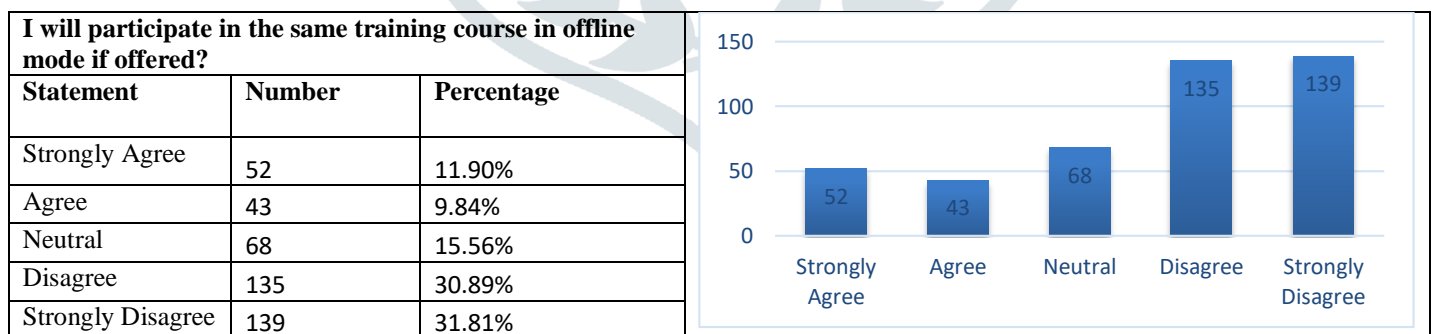
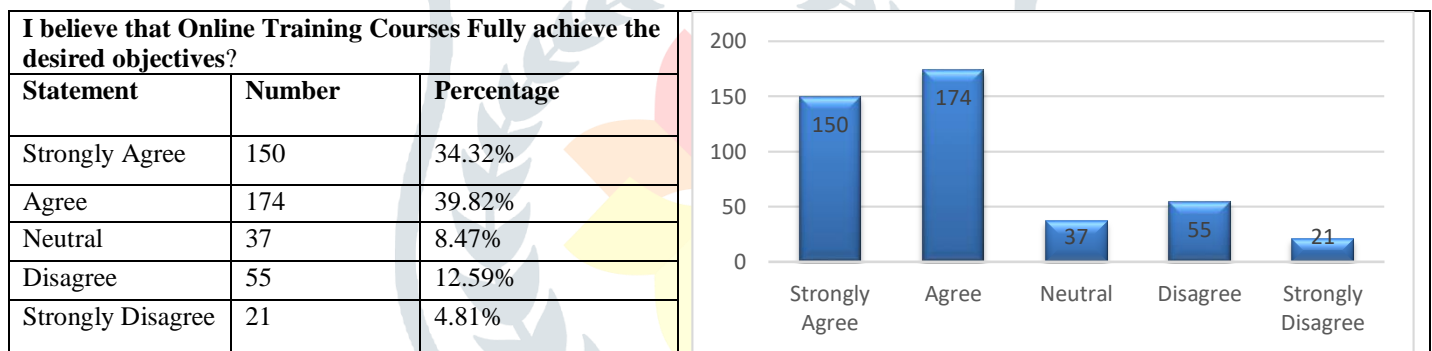
Variable 4	Statements
Acceptance.	Employers do not give due recognition to online training programs.
	Online training Programs are not considered for promotion.
	Online training Programs make no value addition to one's CV.
	Online training programs are still far beyond offline programs in terms of recognition.

The reliability of the questionnaire was measured through a pilot study on the data from twenty-five respondents. The reliability of the questionnaire was found to be acceptable. The data from the google forms was first downloaded as the excel file and then the data was exported to another excel file which was already created for the analysis.

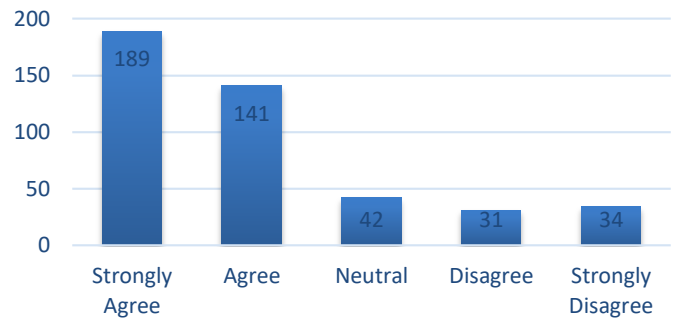
VI Research Findings: -

Research findings for all the factors for all statements are visualized in tabular as well as in graphical representation. The table describes number of responses for each statement along with the percentage of respondents. The graphical representation is made through bar charts with number of responses mentioned. All calculations graphs were made on MS Excel. The findings are shown below for all the variables.

VI(a) Training Outcomes in comparison to offline teaching (Four Statements).



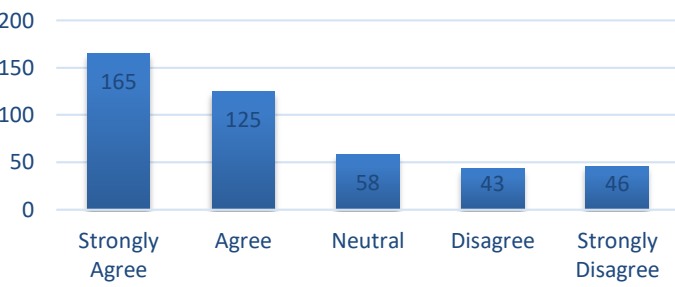
I have the fair clarity of the concepts taught in the online course		
Statement	Number	Percentage
Strongly Agree	189	43.25%
Agree	141	32.27%
Neutral	42	9.61%
Disagree	31	7.09%
Strongly Disagree	34	7.78%



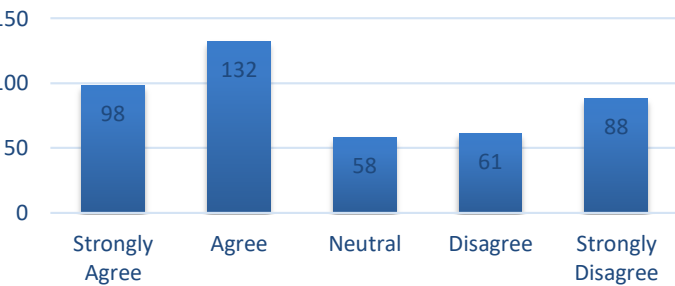
The responses clearly indicate the completion of course objectives through the online mode. When the respondents were asked if they will enroll for the same course in offline mode which they had already completed in online mode. Majority of the respondents indicated that they will not attend the offline course. Furthermore, the willingness of participants to enroll in the advanced course indicate that the objectives of the basic level course are met.

VI(b) Comfort level of the participants. (Four Statements).

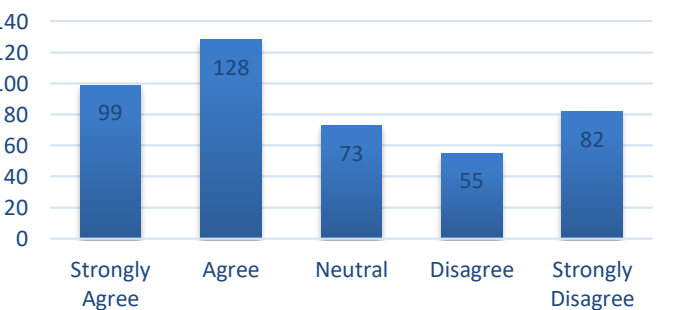
I had the fair comfort level with the online mode of teaching.		
Statement	Number	Percentage
Strongly Agree	165	37.76%
Agree	125	28.60%
Neutral	58	13.27%
Disagree	43	9.84%
Strongly Disagree	46	10.53%



If planned properly online trainings can never result in fatigue among participants.		
Statement	Number	Percentage
Strongly Agree	98	22.43%
Agree	132	30.21%
Neutral	58	13.27%
Disagree	61	13.96%
Strongly Disagree	88	20.14%

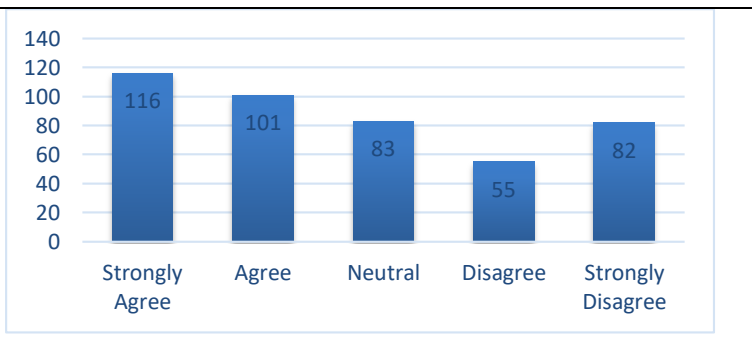


Participating in online training never causes any level of anxiety in me.		
Statement	Number	Percentage
Strongly Agree	99	22.65%
Agree	128	29.29%
Neutral	73	16.70%
Disagree	55	12.59%
Strongly Disagree	82	18.76%



I don't believe comfortability issues will be a cause of not participating in the online course

Statement	Number	Percentage
Strongly Agree	116	26.54%
Agree	101	23.11%
Neutral	83	18.99%
Disagree	55	12.59%
Strongly Disagree	82	18.76%

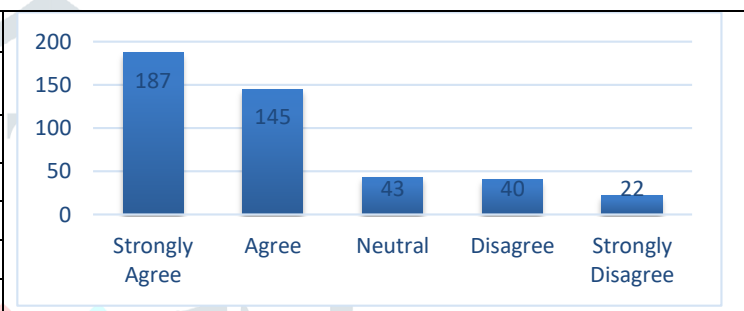


Although a fair number of participants reported that they had the decent level of comfort while attending the online course, but a big number of respondents backed the statement that if the online course is not planned properly same may result in discomfort and fatigue among the participants.

VI(c) Willingness among teachers to teach online. (Four Statements).

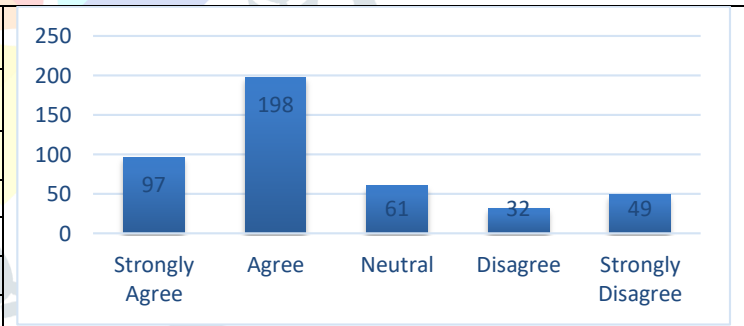
I would love to teach online if offered.

Statement	Number	Percentage
Strongly Agree	187	42.79%
Agree	145	33.18%
Neutral	43	9.84%
Disagree	40	9.15%
Strongly Disagree	22	5.03%



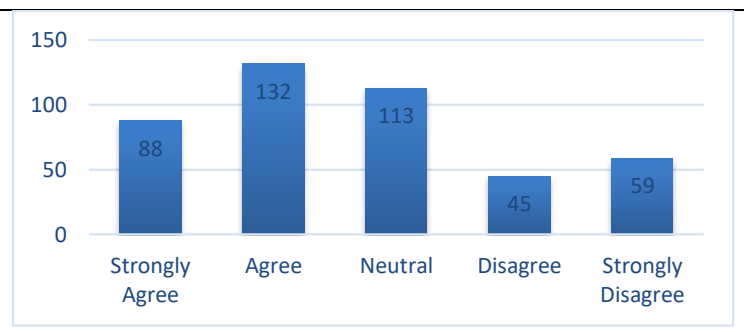
I am planning to teach some part of my courses in online mode.

Statement	Number	Percentage
Strongly Agree	97	22.20%
Agree	198	45.31%
Neutral	61	13.96%
Disagree	32	7.32%
Strongly Disagree	49	11.21%

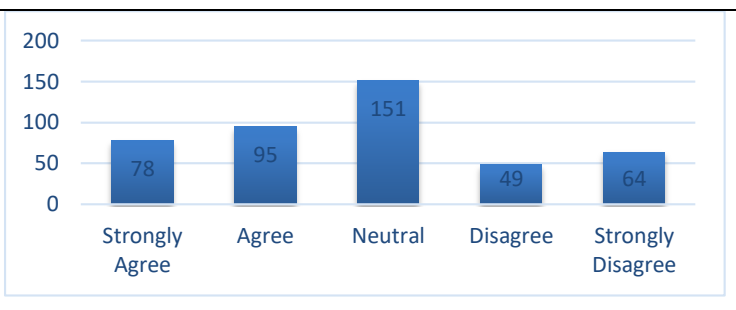


I am willing to invest a bit to enable by self to teach in online mode.

Statement	Number	Percentage
Strongly Agree	88	20.14%
Agree	132	30.21%
Neutral	113	25.86%
Disagree	45	10.30%
Strongly Disagree	59	13.50%



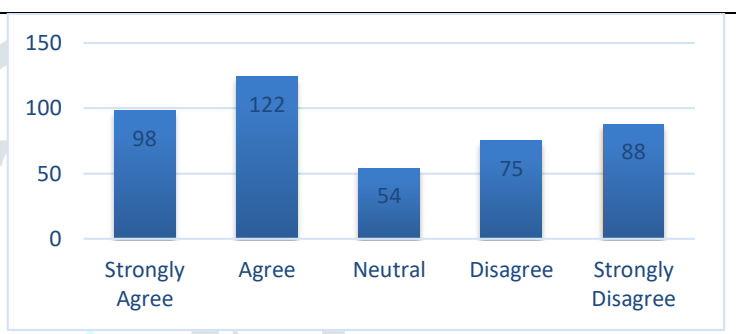
I will spare time to get trained to teach via online mode		
Statement	Number	Percentage
Strongly Agree	78	17.85%
Agree	95	21.74%
Neutral	151	34.55%
Disagree	49	11.21%
Strongly Disagree	64	14.65%



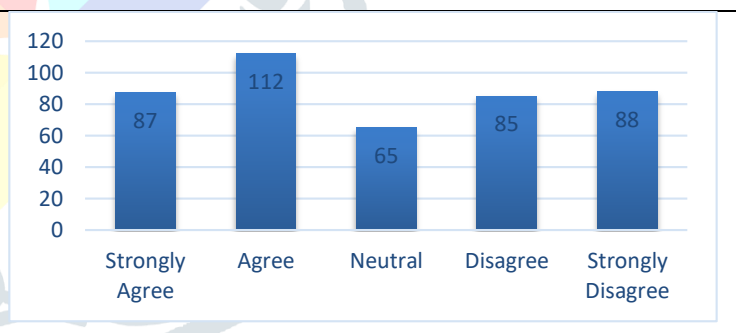
The respondents also showed interest in teaching through online mode. When asked whether they will invest to get themselves prepared in the online mode, a fair number of respondents showed the interest.

VI(d) Preference of online over offline training Programmes. (Four Statements).

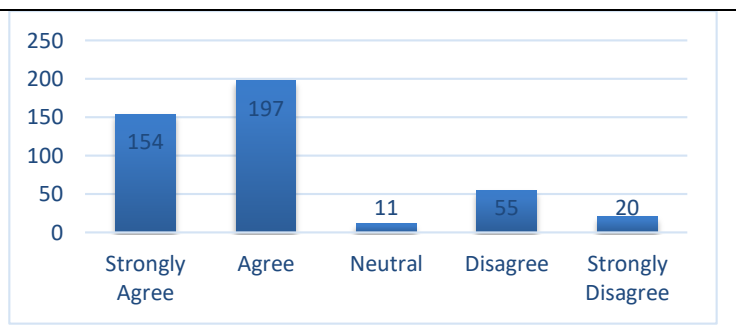
I will prefer online training programs over offline training programs.		
Statement	Number	Percentage
Strongly Agree	98	22.43%
Agree	122	27.92%
Neutral	54	12.36%
Disagree	75	17.16%
Strongly Disagree	88	20.14%



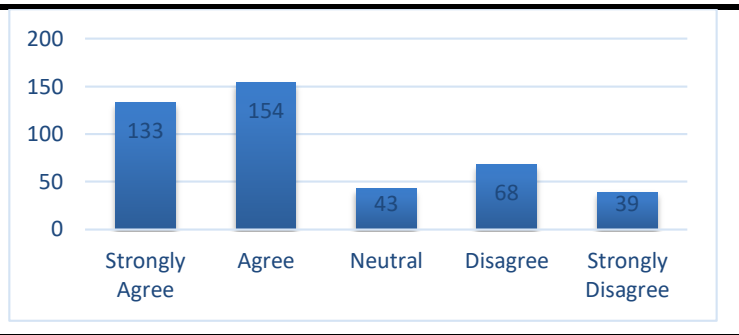
I will encourage my colleagues to prefer online training over offline training.		
Statement	Number	Percentage
Strongly Agree	87	19.91%
Agree	112	25.63%
Neutral	65	14.87%
Disagree	85	19.45%
Strongly Disagree	88	20.14%



If invited as an expert to deliver lecture in training program, I will prefer online mode.		
Statement	Number	Percentage
Strongly Agree	154	35.24%
Agree	197	45.08%
Neutral	11	2.52%
Disagree	55	12.59%
Strongly Disagree	20	4.58%

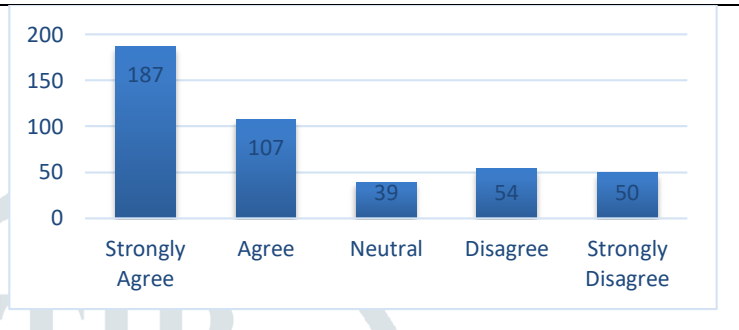


I will advise my institution to prefer offering online training program over offline program		
Statement	Number	Percentage
Strongly Agree	133	30.43%
Agree	154	35.24%
Neutral	43	9.84%
Disagree	68	15.56%
Strongly Disagree	39	8.92%

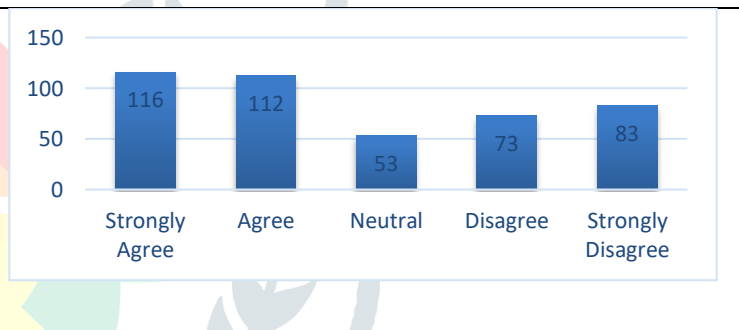


VI(e) Accessibility. (Four Statements).

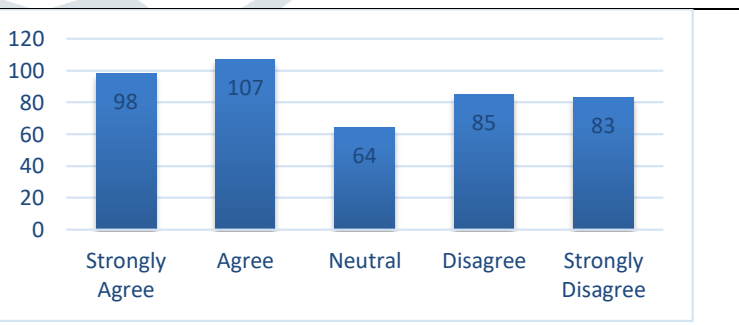
Online Training Programs are much accessible as compared to offline programs.		
Statement	Number	Percentage
Strongly Agree	187	42.79%
Agree	107	24.49%
Neutral	39	8.92%
Disagree	54	12.36%
Strongly Disagree	50	11.44%



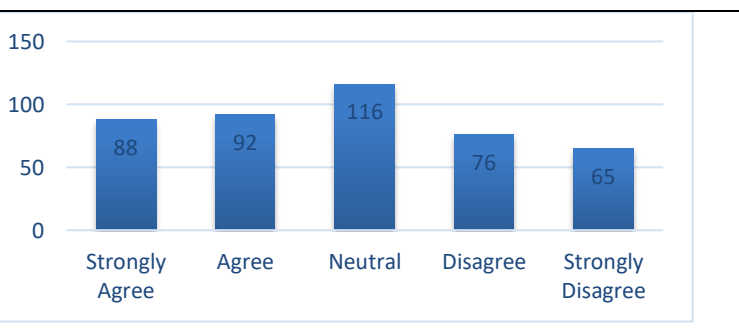
It is very easy to find the online training programs for the topic of your choice		
Statement	Number	Percentage
Strongly Agree	116	26.54%
Agree	112	25.63%
Neutral	53	12.13%
Disagree	73	16.70%
Strongly Disagree	83	18.99%



It is very easy to get the permission from my employer to register for the online training.		
Statement	Number	Percentage
Strongly Agree	98	22.43%
Agree	107	24.49%
Neutral	64	14.65%
Disagree	85	19.45%
Strongly Disagree	83	18.99%

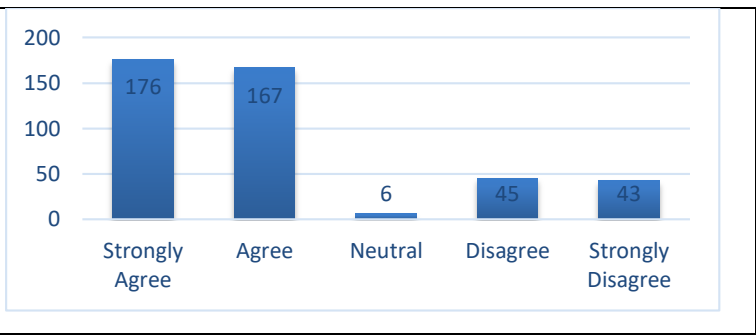


Quality training programs with renowned experts are more accessible via online mode.		
Statement	Number	Percentage
Strongly Agree	88	20.14%
Agree	92	21.05%
Neutral	116	26.54%
Disagree	76	17.39%
Strongly Disagree	65	14.87%

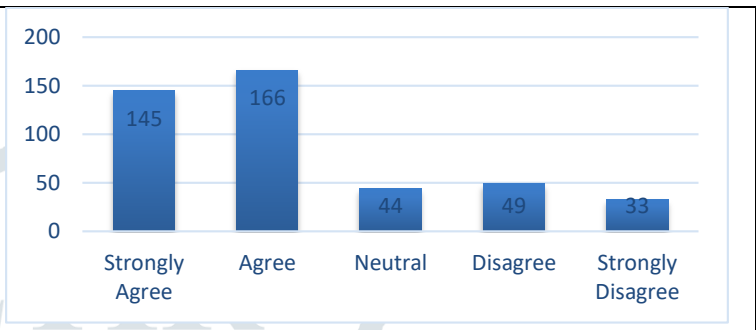


VI(f) Acceptance. (Four Statements).

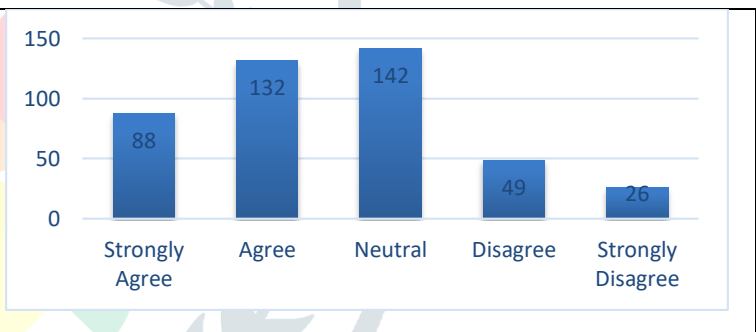
Employers do not give due recognition to online training programs.		
Statement	Number	Percentage
Strongly Agree	176	40.27%
Agree	167	38.22%
Neutral	6	1.37%
Disagree	45	10.30%
Strongly Disagree	43	9.84%



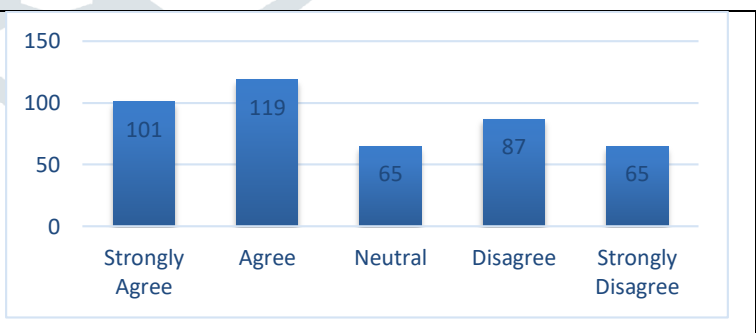
Online training Programs are not considered for career promotion.		
Statement	Number	Percentage
Strongly Agree	145	33.18%
Agree	166	37.99%
Neutral	44	10.07%
Disagree	49	11.21%
Strongly Disagree	33	7.55%



Online training Programs make no value addition to one's CV.		
Statement	Number	Percentage
Strongly Agree	88	20.14%
Agree	132	30.21%
Neutral	142	32.49%
Disagree	49	11.21%
Strongly Disagree	26	5.95%



Online training programs are still far beyond offline programs in terms of recognition.		
Statement	Number	Percentage
Strongly Agree	101	23.11
Agree	119	27.23
Neutral	65	14.87
Disagree	87	19.91
Strongly Disagree	65	14.87



The respondents were asked about the accessibility of online training programs. Largely participants reported that there are no accessibility issues for online training and in fact are more accessible as compared to offline training programs. However, "Acceptance" is where the online training programs lag much behind offline programs. Since the large number of faculty participate in the training programs as they are required for career advancement. As a matter of fact, majority of the respondents reported that online training programs lack acceptance among the employers. It indicates that a lot needs to be done to improve the acceptance of online training programs among the employees.

VII Conclusion and Suggestions. The study reveals that faculty members have a favorable outlook and a positive opinion of online training. Respondents have reported a positive perception in terms of the comfortable implementation of online teaching, and they have expressed a desire to continue teaching online in the future despite differences in gender, teaching experiences, and other demographic factors. According to the study, the respondents support online training and believe that it is able to achieve the desired outputs.

Currently we are in times of transition from classroom instruction and online instruction. While there are certain drawbacks to online teaching and learning, it is evident that online training has a very critical role in future. We may infer from multiple studies that the potential for of online teaching and learning is enormous. Online trainings require recognition, investment and collaborative efforts from stakeholders, policymakers and academia to flourish.

VIII References

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