CHAPTER 3
METHODOLOGY

The present research aimed to study the readiness of teachers for using and developing e-content for their classroom teaching of The Maharaja Sayajirao University of Baroda, Vadodara. The study also focuses on the expected challenges related to the usage of e-content faced by teachers during their classroom teaching. The survey method was used for data collection for this study. The present chapter describes the steps followed in methodology to conduct the study. They are as follow:

3.1 FEASIBILITY STUDY

The reason for conducting the feasibility study was to know the readiness of higher education teachers for using e-content in their classroom teaching, a pilot study was conducted in April 2017 – June 2017 at the Maharaja Sayajirao University of Baroda, Vadodara.

3.1.1 *Objectives of The Feasibility Study*

1. To study the Readiness of the teachers selected from the Maharaja Sayajirao University of Baroda, Vadodara, regarding the usage and development of e-content.

2. To study the readiness of the teachers selected from the Maharaja Sayajirao University of Baroda, Vadodara, regarding the usage and development of e-content in relation to the following aspects:
    - Environment Aspect
    - Humans resource Aspect
    - Financial Aspect
    - Course Content Aspect
3. To study the Expected Barriers related to the usage and development of e-content of selected teachers from the Maharaja Sayajirao University of Baroda, Vadodara

3.1.2 *Population of the Feasibility Study*

The population of the study comprised of all the teachers from different faculty of the Maharaja Sayajirao University of Baroda, Vadodara city.

3.1.3 *Sample of the Feasibility Study*

The sample consisted of thirty teachers from different faculties of Maharaja Sayajirao University of Baroda, Vadodara. The sample of the study was selected from departments and faculties like the Department of English and Gujarati, Management Studies, polytechnic, faculty of Family and Community Sciences, Faculty of Technology and Engineering, Physical Education through purposive sampling technique from the Maharaja Sayajirao University of Baroda, Vadodara.

3.1.4 *Tool used for Data Collection*

A structured questionnaire was prepared for data collection.

3.1.5 *Procedure of Data Collection*

The researcher collected data from selected teachers from different faculties of the Maharaja Sayajirao University of Baroda, Vadodara through the survey method. The data was collected and analyzed by calculating frequency and percentages.

3.1.6 *Major Finding of the Feasibility Study*

- A majority of the percent is (73.33%) of the teachers belonged to the younger age group and a little percentage is (26.67%) of the teachers belonged to the older age group.
- A majority (60%) of the teachers were males were as (40%) of the teachers were females.
- A Very less i.e. (36.67%) of the teachers were having permanent job status, whereas, (63.33%) of the teachers were having a temporary job.
- There were (30%) of the teachers belonged to Arts field, very less that is (23.33%) of the teachers belongs to Commerce field whereas (46.67%) of the teachers belongs to Science field.
- More than half of the teachers (i.e. 60%) were Highly interested in teaching through e-content and forty percent (40%) of the teachers are Less interested in teaching through e-content.
- The majority (63.33%) of the teachers are less experienced, whereas (36.67%) of the teachers were more experienced.
- A very high majority i.e. (93.33%) of the teachers' purpose of using a computer was for email. Secondly, 90% of the teachers were using computers for data storage. Very high majority i.e. (86.67%) of the teachers using a computer for making PowerPoint presentations and making notes, whereas only (43.33%) of the teachers use a computer for sending e-cards.
- A little more than half i.e. (60%) of the teachers were less familiar with e-content whereas (40%) of the teachers were more familiar with e-content.
- A very high majority i.e. (90%) of the teachers were having high competency for prerequisites skills, whereas, only 10% of the teachers were less competent in prerequisites skills. Moreover, the majority i.e. (76.67%) teachers were having high competency in advanced skills whereas only (23.33%) teachers were having less competency in advanced skills.

- More than half of the percent i.e. (60%) of the teachers were more interested in the usage and development of e-content for teaching whereas only (40%) of the teachers were less interested in the same.
- A high majority (i.e. 70%) of the respondents were having overall high readiness for using e-content for their teaching, whereas, nearly one-fourth (i.e. 30%) of the respondents were having overall low readiness for using e-content. Moreover, the high majority (i.e. 70%) of the respondents were having overall high readiness for the development of e-content, whereas nearly one-fourth (i.e. 30%) of the respondents were having overall low readiness for the development of e-content.
- The majority of the teachers had high readiness related to usage aspects namely environment, human resource, financial, and course content. However, amongst these aspects, human resource-related readiness for the usage of e-content, the teacher's percentage was equally distributed. From all the aspects, the teacher's percentage indicated there was high readiness with reference to environment aspects for the usage of e-content.
- The majority of the teachers had a high level of readiness for the development of e-content related to all aspects namely environment, human resource, financial, and course content.
- A little less than half (i.e. 46.67%) teachers opined that more Barriers to the usage of e-content whereas little more than half (i.e. 53.33%) of the teachers opined that there are less barriers for using e-content. Moreover, 53.33% of the teachers opined that more barriers to the development of e-content whereas little less than half (i.e. 46.67%) of the teachers opined that less barriers to the development of e-content are a very positive indicator.

The finding of the feasibility study revealed that the selected teachers' purpose of using a computer was for emailing, for data storage, for making PowerPoint presentations, and making notes for their classroom teaching. The finding of the study also highlighted that the teachers were less familiar with e-content, but teachers were highly interested in teaching through e-content. The findings of the study also revealed that teachers had high readiness related to usage aspects namely environment, human resource, financial, and course content.

Also, the result of the feasibility study highlighted that the teachers had high readiness for the development of e-content. teachers had a high level of readiness for the development of e-content related to all aspects namely environment, human resource, financial, and content. The result of the study showed that the teachers were having high competency for prerequisites skills and advanced skills. The result of the study showed that teachers expressed more barriers to the usage of e-content which indicated the need to undertake an in-depth research study. Therefore, to find out the readiness of the teachers from the Maharaja Sayajirao University of Baroda, Vadodara for the usage and development of e-content, an exploratory study needs to be carried out.

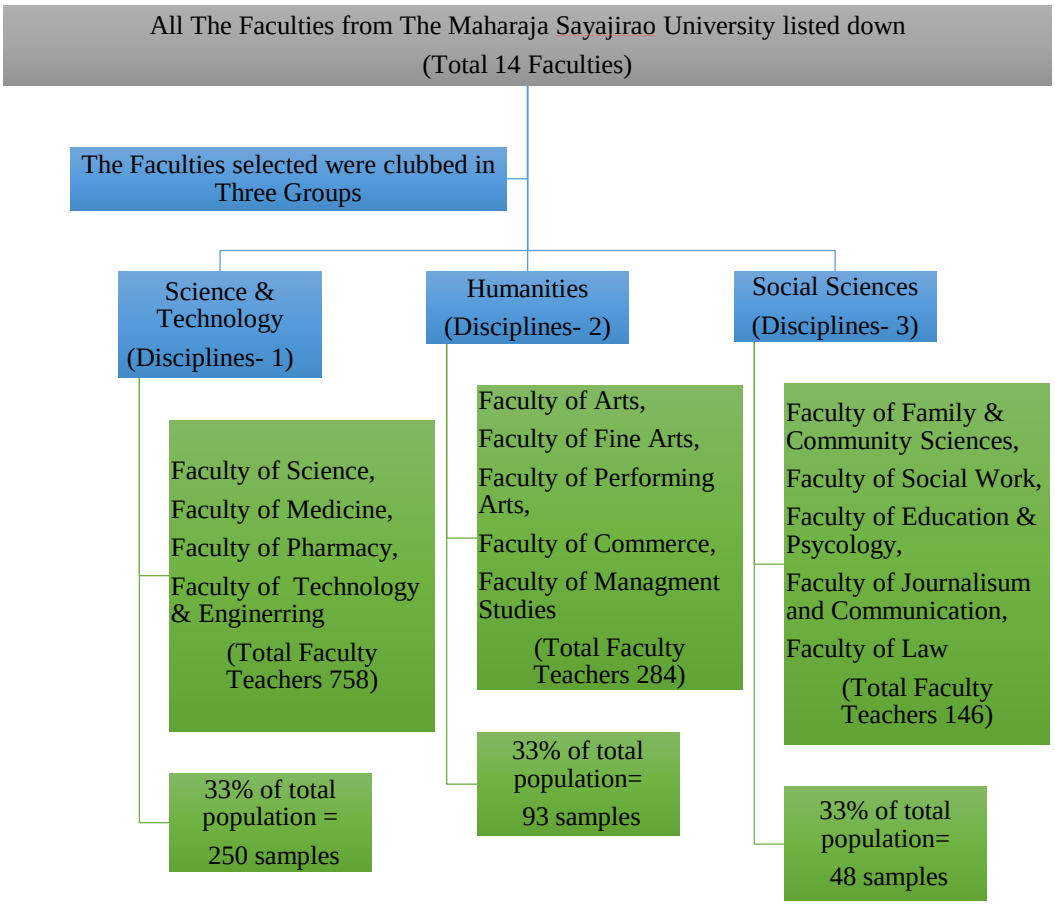
3.2 POPULATION OF THE STUDY

The population of the study comprised of all the teachers from different faculty of the Maharaja Sayajirao University of Baroda, Vadodara city. The university has fourteen different faculties and around 1200 teachers. Information about faculty teachers was taken from the university diary in the year 2017-2018.

3.3 SAMPLE OF THE STUDY

After deciding the population of the study, the next step was the selection of the sample. For this study, the sample was selected through the purposive convenient sampling Technique. Through the survey method, quantitative data were collected by the researcher. The university has fourteen different faculties. All the faculties from The Maharaja Sayajirao University were listed down and clubbed into three different groups.

It was decided to select nearly 1/3rd (i.e., 33% of the total population) of faculty teachers from each Discipline namely Science and Technology, Humanities, and Social Science through purposive convenient sampling Technique. Data collection was done from January 2018 to May 2018. The details about the total number of faculty teachers were collected from the University diary of 2017-2018. The details of a selected number of faculty teachers for the study from each group is as follows:



In total, three hundred and ninety-one faculty teachers were selected from three different categories, as a sample for collecting data for this study.

3.4 CONSTRUCTION OF THE RESEARCH TOOL

3.4.1. *Readiness regarding Usage of e-content:*

A structured questionnaire was designed for data collection. The questionnaire consisted of nine sections in line with the specific objectives of the present research. They were related to the profile of the respondents, their computer and internet-related technical competency, Perceptions towards Technology, knowledge regarding e-content, interest in e-content for teaching, and Readiness for Usage of e-content for Teaching. The tool was constructed in the English language. Before constructing the tool, the relevant content was drawn by referring to the related literature in books, journals, and on the internet.

3.4.2. *Readiness regarding the Development of e-content:*

To study the readiness of the Maharaja Sayajirao University teachers regarding the development of the e-content, the investigator developed an in-depth interview schedule. The tool was constructed in the English language. Before constructing the tool, the relevant content was drawn by referring to the related literature in books, journals, and on the internet.

3.4.3 *Description of the Research Tool for the readiness of the teachers regarding the usage of e-content:*

To get complete data, a questionnaire was designed with nine sections. These sections were divided according to the objectives of the study. They were related to the background information of the respondents, their computer and internet usage, computer and internet related technical competency, Perception towards Technology, Knowledge regarding e-content, Interest in e-content for teaching**,** Expected Challenges, and Suggestions to improve the usage and development of e-content in classroom teaching.

Table 1: Description of the research tool

Section	Content	Response System
1	Background information (Designation, Gender, Age, Education Qualification, Status of Job, Area of Specialization, Teaching Experience, ICT Technology used for Teaching)	Checklist
2	Computer & Internet Usage (Frequency of using computer and internet, purpose, place of accessing)	Checklist
3	Computer & internet related Technical Competency (Prerequisite's skills, Advance skills, Online skills)	Three-Point Response System
4	Perception towards Technology	Three-Point Response System
5	Knowledge regarding e-content	Knowledge test
6	Interest in e-content for teaching	Three-point response system
7	Readiness of the Teachers for Usage of e-content for Teaching	Five Point Response System
8	Expected Challenges related to the usage of e-Content for Teaching	Four Point Response System
9	Suggestions	Five Point Response System

The details of the research tool are as follows:

Section 1: Background Information

Section 1 of the research tool was prepared to gather the personal and professional data related to the Teachers selected for the study. It included questions related to their,

- Designation
- Gender
- Age
- Educational qualification
- Status of Job
- Area of Specialization
- Teaching Experience
- ICT Technology used for Teaching

Section 2: Computer and Internet Usage

This section was prepared to gather information regarding the usage of Computer and internet usage by the selected teachers. The section included questions related to the following points:

- Frequency of using Computer & Internet
- Gadgets used to access the internet
- Place of accessing the Computers & Internet
- Purposes of using Computer & internet
- Devices to use the internet
- Type of Internet speed used

Section 3: Computer and Internet-related Technical Competency

Section 3 included the exhaustive list of statements related to prerequisite skills, advanced skills, and Online Skills. The tool consisted of a three-point scale with the options namely fully competent, partially competent, and not competent were mentioned. Each respondent had to choose one option for each statement mentioned. For prerequisite skills, nine statements were prepared, for advanced skills seven statements, and for Online skills, twelve statements were prepared.

Section 4: Perceptions towards Technology

This section was designed to seek information regarding one of the independent variables of the present investigation i.e., perceptions towards technology. The section included sixteen statements. Eight statements were positive and the other eight statements were negatively constructed. The respondents were provided with three options namely great extent, some extent, and less extent. They had to choose any one option against each statement and put a tick mark against it.

Section 5: Knowledge regarding e-content

This section was developed to seek the knowledge level of the selected respondents regarding e-content. Section 5 included various types of statements like, fill in the blanks, true and false statements, and choice of appropriate words.

Section 6: Interest in e-content for Teaching

This section was designed to seek the information of the interest of the respondents in e-content for teaching. The section is comprised of fifteen statements. The responses were to be sought in a three-point scale responses system, i.e., fully interested, partially interested, and not interested.

Section 7: Readiness of the Teachers for the usage of e-content for Teaching

Section 7 was the main section of the entire tool. It consisted of the statements reflecting the readiness of the University teachers on several aspects to implement classroom teaching through e-content. Different subsections were made to seek the responses of teachers, keeping in mind their readiness related to the environment, finance, technology, and content of the courses taught at university. The two aspects namely Environment and Technology were further divided into statements related to self and department separately. Ninety-nine statements were finally approved and incorporated into the tool to check the readiness level of the teachers regarding their usage of e-content for teaching. The responses were sought on a five-point scale where options were marked as strongly agree, agree, neutral, disagree, and strongly disagree.

Section 8: Expected Challenges related to usage for Teaching

This section was designed to seek the opinions of the respondents regarding the expected challenges related to the usage of e-content for teaching. Twenty statements were prepared to obtain the opinions on the mentioned subject. The response system used was a four-point scale, namely great extent, some extent, less extent, and not at all.

Section 9: Suggestion related to the Usage of e-content for Teaching

Section 9 included statements to seek the agreement of the respondents towards the suggestions enlisted regarding the e-content usage by the teachers for their teaching. The section included twenty-three statements for which the four-point response system was used as strongly agree, agree, neutral, disagree, and strongly disagree.

3.4.4. *In-depth Interview schedule for the readiness of teachers the regarding development of e-content*

The in-depth interview schedule consisted of eight questions of open-ended nature. The questions were related to Status of Usage and Development of e-content, Faculty level Planning & Implementation, Future planning for improving usage and development status of e-content in the classroom, etc.

3.5 VALIDATION OF RESEARCH TOOL

To check the validity of the content of the questionnaire, a developed questionnaire was given to the experts in the related areas. The experts were requested to review and give their comments as well as critical remarks for the content, framing of questions/statements, validity according to the objectives and aspects of the study, clarity of language, and response system used in the questionnaire. The suggested change by experts was incorporated before the tool was finalized. The Experts approached were from the following faculties:

- Professor, Department of Extension and Communication, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara
- Associate Professor, Department of Extension and Communication, Faculty of Family and Community Sciences, The Maharaja Sayajirao University of Baroda, Vadodara
- Professor, Department of Education, Faculty of Education and Psychology, The Maharaja Sayajirao University of Baroda, Vadodara
- Professors, from the Institute of Extension Education, Anand Agriculture University, Anand, Gujarat
- Associate Professor, lady Irwin College, Delhi.

3.6 RELIABILITY OF RESEARCH TOOL

After validation of the tool, the next step was to check the reliability of the research tool. The Test-retest method was used to measure the reliability of the tools. The coefficient of correlation was calculated between two sets of scores. The tool was administered to twenty selected teachers from different faculties of The Maharaja Sayajirao University of Baroda, Vadodara. After a gap of a few days, the tool was re-administered to the same group of teachers. A high correlation (0.82) was found between the two sets of scores revealing the high reliability of the tools.

$$r = \frac{\sum xy}{\sqrt{\sum x^2 \sum y^2}}$$

Where r = Coefficient of correlation

X= Score of the First test

Y= Score of the Second test

3.7 PRE-TESTING OF THE RESEARCH TOOL

After checking reliability, pre-testing of the tool was done. The tool was pretested on ten teachers of different faculties of The Maharaja Sayajirao University of Baroda, Vadodara. The purpose of the pre-testing was to know the difficulty faced by the teachers in filling the questionnaire, the time required for filling up the questionnaire, and to check the clarity of the language. The teachers did not report any major difficulty in responding to the questionnaire.

3.8 COLLECTIONS OF THE DATA

To study the readiness of selected teachers regarding the usage of e-content for their classroom teaching, the researcher collected data from selected teachers from different faculties of the Maharaja Sayajirao University of Baroda, Vadodara from January 2018 to May 2018. All the selected faculties were covered by the researcher for data collection. Before starting data collection in different departments of faculties, the researcher had personally taken permission from the head of the departments for data-collection and took permissions and prior appointments from the selected teachers.

The questionnaire was distributed to selected faculty teachers, and they were requested to fill out the questionnaire. The respondents returned the questionnaire within nine to ten days, but the majority of the time researcher had to remind respondents to return the filled questionnaire on time. The heads of the selected department of faculties were contacted and the purpose of the study was explained at first. The teachers were also contacted other than classrooms like common gathering places. In some faculties, Teacher Supervisors also helped researcher for gathering teachers for data collection.

Nearly five hundred and fifty forms were distributed amongst the faculty members for the data collection. Out of which three hundred and six questionnaires were received back out of which six questionnaires were unfilled and incomplete, so three hundred questionnaires were selected for final data analysis.

The reasons for receiving a smaller number of questionnaires, despite distributing more than five hundred questionnaires were that some of the faculties, teachers were unaware of e-content, so they were not ready to fill out a questionnaire. The researcher faced the following difficulties in data collection

- The busy schedule of the faculty teachers is due to their job duties.
- Unavailability of the faculty teachers in the department despite the frequent visits at a different time of the day by the researcher.
- Teachers were not satisfied with the length of the tool, so they did not fill questionnaire properly.
- The unwillingness of the respondents to fill out the questionnaire.
- Some of the faculty members lost the questionnaire and never returned.
- In many of the faculties, teachers misplaced questionnaires and asked the researcher for another questionnaire.
- Fixing up the schedule with the teachers for data collection in the various faculties was difficult.
- Faculty teachers needed repeated reminders to fill up and return questionnaires on time.

3.8.1 *Collection of Data for the Readiness of Teachers for the Development of e-content*

For the in-depth Interview schedule researcher approached the head of the departments and senior teachers of the department and selected them through the purposive sampling technique. The researcher had collected the data from fifteen teachers, their status of usage and development of e-content, planning and implementation strategies for usage and development of e-content, the hindrances in acquiring the e-content related infrastructure in their department, steps in motivating the teachers for using and development of e-content, efforts made by the department for preparing teachers for content digitalization and future plans for the development of e-content.

3.8.1.1. Interpretation of the data

In relation to the in-depth interviews schedule step, the researcher prepared transcripts from running notes. Verbatims were written of the responses given by the responses based on questions asked. Further, the responses were reported in finding, in the boxes, containing verbatims, according to the subline derived.

3.9 SCORING AND CATEGORIZATION OF DATA

The categorizations of independent and dependent variables of the study were done as follows:

3.9.1 *Scoring and Categorization of variables*

Table: 2 Categorization of the Independent Variable of the Study

Variables	Basis	Category
Age	Below mean	Young
	Mean and above	Old
Status of Job	Permanent	Permanent
	Temporary	Temporary
Area of Specialization	Faculty of Science,	Science & technology
	Faculty of Medicine,	
	Faculty of Pharmacy	
	Faculty of Technology & Engineering	
	Faculty of Arts,	Humanities
	Faculty of Fine Arts,	
	Faculty of Performing Arts,	
	Faculty of Commerce,	
	Faculty of Management Studies	
	faculty of family and community sciences	Social Sciences
	Faculty of Social Work,	
	Faculty of Education & Psychology,	
	Faculty of Journalism and Communication,	
	Faculty of Law	
Teaching Experience	Below mean	Less teaching
	Mean and above mean	More teaching
Computer & Internet Usage	Below mean	Low usage
	Mean and above mean	High usage
Computer & Internet related Technical Competency	Below mean	Low competency
	Mean and above mean	High competency
Perceptions towards Technology	Below mean	Unfavorable Perceptions
	Mean and above mean	Favorable Perceptions
Knowledge regarding e-content	Below mean	Low knowledge
	Mean and above mean	High knowledge
Interest in e-content for Teaching	Below mean	Less interested
	Mean and above mean	More interested

Table: 3 Categorization of other Background Information of the Respondents

Variables	Basis	Category
Designation	Professor / Associate professor	Professor / Associate professor
	Assistant professor	Assistant professor
	Temporary Assistant Professor /Temporary Teaching Assistant	Temporary Assistant Professor /Temporary Teaching Assistant
Gender	-	Female
	-	Male
Educational qualification	Post-Graduation	Post-Graduation
	M.Phil.	M.Phil.
	Ph.D.	Ph. D.
ICT Use	-	Computer
		Printer
		LCD projector
		Internet/ Wi-Fi connections
		Mobile
		Video-audio sharing through applications
		Video conferencing

3.9.2 Scoring and Categorization of the Dependent Variables

Table: 4 Aspect wise minimum and maximum total obtainable score:

Aspects		Number of statements	Maximum obtainable scores	Minimum obtainable scores
Environment Aspect	Related to Self	44	220	44
	Related to Department	15	75	15
Financial Aspect	-	9	45	9
Technological Aspect	Related to Self	7	35	7
	Related to Department	16	80	16
Course Content Aspect	-	8	40	8
Overall readiness level		99	495	99

Table: 5 Categorization of Overall Readiness level of teachers regarding usage of e-content for teaching

	Basis	Categories
overall readiness level of teachers regarding usage of e-content for teaching	below mean	Less readiness
	Mean and above mean	High readiness

Table: 6 Categorization of Aspect wise readiness level of teachers regarding usage of e-content for their teaching

Aspects		Basis	Categories
Environment Aspect	Related to self	Below mean	Less readiness
		Mean and above mean	High readiness
	Related to department	Below mean	Less readiness
		Mean and above mean	High readiness
Financial Aspect	-	Below mean	Less readiness
		Mean and above mean	High readiness
Technological Aspect	Related to self	Below mean	Less readiness
		Mean and above mean	High readiness
	Related to department	Below mean	Less readiness
		Mean and above mean	High readiness
Course content Aspect	-	Below mean	Less readiness
		Mean and above mean	High readiness

3.9.3 *Scoring and Categorization of the Independent Variable*

3.9.3.1 Computer & Internet Usage

The computer & internet usage was calculated by Frequency of using computer & internet, Different Gadgets used, and gadgets used for accessing the internet, Sources of accessing the internet, Purposes of using computer and internet, Type of internet connection and internet speed use.

Table: 7 The Possible Scores for Statements on Computer & Internet Usages

Sr. No.	No. of items	Minimum score	Maximum score
1	How frequently do you use the computer	1	5
2	Which of the following gadgets do you own	1	5
3	From where you access the computer	1	10
4	For what purposes do you use computer	1	5
5	Through which device do you use the internet	1	5
6	From where you access the internet	1	4
7	How frequently do you use the internet	1	5
8	Which type of primary internet connection do you [illegible]	1	3
9	Which type of internet speed do you use	1	5
Total		9	47

Table: 8 Categorization of the Score for Computer & Internet Usage

Variable	Basis	Categories
Computer & Internet Usage	Below mean	Low usage
	Mean and above mean	High usage

3.9.3.2 Computer & Internet related Technical Competency

Table: 9 Scoring Pattern according to the scale measuring for Computer & Internet related Technical Competency

Description of variable	Number of statements	Fully competent	Partially competent	Less competent
Prerequisite's skills	9	3	2	1
Advance skills	7	3	2	1
Online skills	12	3	2	1

Table: 10 The possible scores for statements on Computer & Internet related Technical Competency

Computer & Internet Related Technical Competency	Number of statements	Minimum obtainable scores	Maximum obtainable scores
Prerequisite's skills	9	9	27
Advance skills	7	7	21
Online skills	12	12	36
Total	28	28	84

Table: 11 Categorization of the score for Computer & Internet related Technical Competency

Variable	Basis	Categories
Computer & internet related technical competency	Below mean	Low competency
	Mean and above mean	high competency

3.9.3.3. Perceptions towards Technology

The statement on perception towards technology was scored as given below:

Table: 12 Scoring Pattern according to the scale measuring for Perceptions towards Technology

Response	The Score for Positive Item	The Score for Negative Item
Great extent	3	1
Some extent	2	2
Less extent	1	3

Based on scoring, the minimum and maximum values of the score were calculated as follows:

Table: 13 The possible scores for statements on Perceptions towards Technology

Nature of statement	Number of statements	Minimum obtainable scores	Maximum obtainable scores
Positive	9	9	27
Negative	7	7	21
Overall perception towards technology	16	16	48

Table: 14 Categorization of the score for Perceptions towards Technology

After this, two categories of perception towards technology were formed based on the minimum and maximum scores.

Variable	Basis	Categories
Perception towards Technology	Below mean	Unfavorable Perception
	Mean and above mean	Favorable Perception

3.9.3.4. Knowledge regarding e-content

Table: 15 Scoring Pattern according to the scale measuring for Knowledge regarding e-content

Response	Score
Correct answer	1
No answer/ incorrect answer	0

Table: 16 The possible scores for statements on Knowledge regarding e-content

	Number of statements	Minimum obtainable scores	Maximum obtainable scores
Knowledge regarding e-content	20	0	20

Table: 17 Categorization of the score for Knowledge regarding e-content

Variable	Basis	Categories
Knowledge regarding e-content	Mean & above mean	High knowledge
	Below mean	Low knowledge

3.9.3.5. Interest in e-content for Teaching

Table: 18 Scoring Pattern according to the scale measuring for Interest in e-content for Teaching

Variable	Fully interested	Partially interested	Less interested
Interest in e-content for Teaching	3	2	1

Table: 19 The possible scores for statements on of Interests in e-content for Teaching

Interest in e-content for Teaching	Number of statements	Minimum obtainable scores	Maximum obtainable scores
	15	15	45

Table: 20 Categorization of the score for Interest in e-content for Teaching

Variable	Basis	Categories
Interest in e-content for Teaching	Below mean	Less Interested
	Mean and above mean	More Interested

3.9.4 *Scoring and categorization of Expected Challenges related to Usage of e-content for Teaching*

To measure the extent of challenges related to the usage of e-content for teaching faced by teachers a four-point rating scale was prepared which includes twenty statements. The maximum obtainable score was eighty and the minimum obtainable score was twenty. The scoring of the statements in the scale was done as follows:

Table: 21 The possible scores for statements on Expected Challenges related to the Usage of e-content for Teaching

Expected challenges related to the usage of e-content for teaching	Number of statements	Minimum obtainable scores	Maximum obtainable scores
	20	20	80

Table: 22 The range of intensity indices for Expected Challenges related to the Usage of e-content for Teaching

The extent of Expected Challenges	Score	Range of Intensity Indices
Great extent	4	3.25 – 4.00
Some extent	3	2.50 – 3.25
Less extent	2	1.75 – 2.50
Not at all	1	0.75- 1.75

3.9.5. *Scoring and Categorization of Suggestions related to Usage of e-content for Teaching*

To measure the suggestions related to the usage of e-content for teaching given by teachers a five-point rating scale was prepared which includes twenty-three statements. The maximum obtainable score was one hundred and fifteen and the minimum obtainable score was twenty-three. The scoring of the statements in the scale was done as follows:

Table: 23 The possible scores for statements on Suggestions related to Usage of e-content for Teaching

Suggestions related to the usage of e-content for teaching	Number of statements	Minimum obtainable scores	Maximum obtainable scores
	23	23	115

Table: 24 The range of intensity indices for the Suggestions related to Usage of e-content for Teaching

Extent of Suggestions	Score	Range of Intensity Indices
Strongly agree	5	4.2 – 5.0
Agree	4	3.4 – 4.2
Neutral	3	2.6 – 3.4
Disagree	2	1.8 – 2.6
Strongly disagree	1	0.8 – 1.8

3.10 PLAN FOR STATISTICAL ANALYSIS

The statistical measures were used for the analysis of collected data. The data were coded in Microsoft Excel worksheets and analyzed in SPSS package software. The statistical measures used were as follows:

Table 25: Plan for statistical analysis

Content	Statistical Measures
Background information of the respondent	Percentages
Computer & Internet Usage	Percentages
Computer & Internet related Technical competency	Percentages
Perception towards Technology	Percentages
Knowledge regarding e-content	Percentages
Interest in e-content for Teaching	Percentages
Readiness of the teachers for Usage of e-content for Teaching	Mean score, T-Test, ANOVA (f-test), Tukey's HSD
Expected Challenges related to the usage of e-Content for Teaching	Intensity indices
Suggestions	Intensity indices

The formula used:

- **Formula used for T-Test:** $t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{N_1} + \frac{s_2^2}{N_2}}}$
- **Formula used for ANOVA (f-test):** $= \frac{\text{Between Group Variance}}{\text{Within Group Variance}}$

Where, Between Group Variance=Variance in the mean of each group from the total mean of all variance group
Within Group Variance=Average variance of scores within groups

- **The Formula used for Tukey's HSD test:** $\boldsymbol{HSD = \frac{M_1 - M_2}{\sqrt{MS_w\left[\frac{1}{n}\right]}}}$

  Where, HSD = Honestly Significant Difference
  M_1 and M_2 = mean values
  MS_w =Mean Square Width
  n = number per mean

- **The formula used for calculating Intensity Indices:**

$$= \frac{\text{Total Score for an Item}}{\text{Total Number of Respondents}}$$

*Statistical package of social sciences (SPSS 20.0) software was used to analyze data.