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Development of scale to measure the perception of agriculture university teachers and students about utilization of ICT tools in agricultural education

Nasratullah Kakar¹ and Manjula N²

¹Ph.D., Scholar, Department of Agricultural Extension Education, College of Agriculture, Dharwad, University of Agricultural Sciences, Dharwad, Karnataka, India

²Professor, Department of Agricultural Extension Education, College of Agriculture, Dharwad, University of Agricultural Sciences, Dharwad, Karnataka, India

Corresponding Author: Nasratullah Kakar

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Abstract

A scale was developed to measure the perception of Agriculture University teachers and students about utilization of ICT tools in Agricultural Education by following the Liker's summated rating scale. Based on the review of literature and discussion with the experts, 124 statements were prepared on dimensions. Relevancy rating was sent to 250 scientists and extension specialists working in research institutes of Indian Council of Agriculture Research (ICAR), State Agricultural University and development Departments for critical evaluation of statements on five point continuum. Seventy five judges sent in time were analyzed and aggregate of 100 statements were selected by finding the relevancy weightage scores (RWS) equal or more than 0.75 and mean relevancy score of 3.00 were selected for the item analysis. In item analysis the selected statements were administered to 40 teachers and 40 students in non-sample area in University of Agricultural Sciences, Dharwad. Finally a total of 38 statements were selected for the study based on 'r' values (> 1.75) they were included in the final scale. The 'r' value of the scale was found to be 0.86, which was significant at one % level indicating the high reliability. The scale developed was found to be reliable and valid, hence it is recommended to use. To study, utilization of ICT tools in Agricultural Education.

Keywords: Perception, utilization of ICT tools, item analysis, reliability and validity

Introduction

Information Communication Technology (ICT) is defined as a worldwide network in which individuals are connected via the use of ICT tools such as cell phones and technology such as computers to share information and knowledge. The advancement ICT has resulted in changes that have an impact on many elements of our society and are becoming increasingly crucial in our everyday lives. Education has reaped the greatest benefits from technological improvements.

The first-hand technologies challenge traditional teaching and learning methodologies and materials, and have fundamental implications for traditional teaching and learning methods by reshaping how teachers and learners gain access to knowledge. Computers, the Internet, and wireless communication technologies, as well as strong software that can analyse and integrate sound, text, and video into electronic media are examples of current ICT tools.

Universities and cultural organizations across India are rapidly recognizing the importance of reforming education via the use of modern ICTs. The National Policy for ICT in Education, which is currently being developed, emphasizes the importance of including ICT as a subject in the curriculum as well as reinforcing the overall teaching and

learning process. In India, EDUSAT (Educational Satellite) and other TV and radio channels are used to distribute content to open and distance education systems. However, ICT has yet to play a substantial role in the content delivery. Many sectors around the world have found ICTs to be a valuable source of modernization and competency enhancement. In the field of education, in particular, the usage of ICT has become an integral aspect of university students' learning. Universities that have completely embraced ICT have seen significant improvements in the use of ICT to improve learning techniques, teaching, research, and development. Faculty of Education teachers have found it difficult to keep up with the integration of ICT into teaching due to the rapid pace of technological development in education.

New teaching and research methodologies have been introduced as a result of the use of ICTs. ICT not only opens up new possibilities, but it also puts users' trust to the test. ICT integration into educational classroom teaching has reached a new high point in recent years.

ICT provides teachers and students with access to a wealth of information. This covers the case for ICT as a powerful tool for expanding knowledge access. Teachers and students now have better access to various forms of information and communication technology, allowing them to do more

informed research. It also allows individuals to make contact with, collaborate with, and develop productive relationships with other teachers who share similar interests. ICTs empower students to take charge of their own learning, think critically and analytically, and collaborate more effectively. ICT in the educational sector has the potential to significantly improve educational quality. Learners can control the content, timing, and pace of their learning through a variety of ICT applications. This gives students the option of picking and choosing what they want to learn.

Methodology

Likert method of scale development was used to develop scale. The steps followed in developing the scale to measure perception of teachers and students about utilization of ICT tools in Agricultural Education is presented below. Twelve dimensions were identified.

1. Identification of dimensions

Based on the review of the past studies and discussion with the specialists in the concerned field. The dimensions including prior knowledge, usefulness, effectiveness, user friendly nature, convenience, speed, accessibility, integration, multimedia utility, infrastructure, reliability/security, storage and retrieval of information and complexity.

2. Identification of items/statements

2.1. Collection of items /statements

One hundred eighty draft statements on the perception of teachers and students about utilization of ICT tools were formed based on review of literature, researcher's own experience. These statements were carefully edited in the light of 14 criteria suggested by Edward (1957) [3], and 124 statements were selected.

3. Relevancy weightage

All the statements were subjected to scrutiny by an expert panel to determine the relevancy and screening for inclusion in the final scale. The list of scrutinized 124 statements was sent to 200 experts to critically evaluate each statement for its relevancy to measure perception of teachers and students about utilization of ICT tools in Agricultural Education. The experts were requested to give their response on a five point continuum viz., Most Relevant (MR), Relevant (R), Somewhat Relevant (SR), Less Relevant (LR) and Not Relevant (NR) with scores 5, 4, 3, 2 and 1, respectively for positive statements and scoring was reversed for negative statements.

75 experts responded in a time span of two months. The relevancy score of each item was ascertained by adding the scores on rating scale for all the 75 experts' responses. Relevancy Percentage (RP), Relevancy Weightage (RW) and Mean Relevancy score (MRS) were worked out for all the 124 items/ statements by using the following formulae.

$$\text{Relevancy Percentage (RP)} = \frac{\text{MR} \times 5 + \text{R} \times 4 + \text{SWR} \times 3 + \text{LR} \times 2 + \text{NR} \times 1}{\text{Maximum possible score (85} \times 5 = 425)} \times 100$$

$$\text{Relevancy Weightage (RW)} = \frac{\text{MR} \times 5 + \text{R} \times 4 + \text{SWR} \times 3 + \text{LR} \times 2 + \text{NR} \times 1}{\text{Maximum possible score (85} \times 5 = 425)}$$

$$\text{Mean Relevancy Score (MRS)} = \frac{\text{MR} \times 5 + \text{R} \times 4 + \text{SWR} \times 3 + \text{LR} \times 2 + \text{NR} \times 1}{\text{Number of judge's respondent}}$$

The statements having relevancy percentage more than (75.00%) & relevancy weightage more than 0.75 and mean relevancy score more than 3.00 were considered for final selection of statements. By this process, out of 124 statements, 100 statements had relevancy percentage above 75, relevancy weightage above 0.75 and mean relevancy score more than 3.00 and they were isolated in the first stage of screening, suitably modified and rewritten as per the comments of experts. Thus, finally 100 statements (Table 1) were selected after the relevancy test.

4. Item analysis

The selected 100 statements were subjected to item analysis to demarcate the items. Thus scrutinized statements representing the perception of teachers and students about utilization of ICT tools in Agricultural Education to 80 respondents from non-sample area of University of Agricultural Sciences, Dharwad were pre tested. The respondents were asked to indicate their degree of agreement or disagreement with each statement on a five point continuum viz., strongly agree, agree, undecided, disagree and strongly disagree with scores of 5, 4, 3, 2 and 1, respectively and negative statements scores were reversed.

The summated score for the total statements of each respondent was calculated. For each respondent the maximum possible score for 100 statements was 500 and the minimum was 100. The scores of the respondents were then arranged in a descending order. The 25% from highest scores (high group) and 25% from lowest scores (low group) were taken for the item analysis. These responses were subjected to item analysis for selection of the items that constitute the final perception and acceptance scale.

The critical ratio of (t-value) measure, the extent to which a given statement differentiates between the high and low groups of respondents for each statement was calculated by using the following formula

$$t = \frac{\bar{X}_H - \bar{X}_L}{\sqrt{\left(\frac{\sum \bar{X}_H^2 - \frac{(\sum \bar{X}_H)^2}{n}}{n(n-1)}\right) \times \left(\frac{\sum \bar{X}_L^2 - \frac{(\sum \bar{X}_L)^2}{n}}{n(n-1)}\right)}}$$

Where

$\bar{X}_H$ = The mean score on given statement of the high group

$\bar{X}_L$ = The mean score on given statement of the low group

$\sum X_H^2$ = Sum of squares of the individual score on a given statement for high group

$\sum X_L^2$ = Sum of squares of the individual score on a given statement for low group

n = Number of respondents in each group

t = the extent to which a given statement differentiates between the high and low group.

After calculating the t- values for all the items of the perception & acceptance scale using the formula, the values of the statements were arranged in descending order from

the highest to the lowest and 100 statements were selected from the scale whose values are highest (t- values more than 1.75), for both positive and negative statements.

Selection of perception and acceptance of statements for final Scale

After computing “t” value for all the items, 38 statements with highest “t” value equal to or greater than 1.75 were selected. The thumb rule of rejecting items with ‘t’ value less than 1.75 was followed as suggested by, Edward (1957) [3]. As per the thumb rule selection of items to be retained in the scale, includes the scales with highest discriminating values excluding the scales with poor discriminating ability and questionable validity. Thus, 38 statements were retained for consideration in the final scale based on the following norms

- The ‘t’ value should be more than 1.75
- The statement should present a new idea (the idea not overlapping with that expressed other)
- The statement should be simply worded and brief.

5. Reliability and validity of perception and acceptance scale

The scale developed was further standardized by establishing its reliability and validity. Reliability is the accuracy or precision of measuring instrument. Split-Half method was followed, to know the reliability of the scale.

Split-Half methodology

The 38 selected perception items were divided into two halves by odd-even method. The two halves were administered separately to 20 teachers and 20 students in a non-sample area. The scores were subjected to product moment correlation test in order to find out the reliability of the half-test. The half-test reliability coefficient (r) was 0.86, which was significant at one % level of probability. Further, the reliability coefficient of the whole test was computed using the Spearman-Brown prophecy formula given below. By formulae

$$r_{1/2} = \sqrt{\frac{n(\sum XY - (\sum X)(\sum Y))}{(n\sum X^2 - (\sum X)^2)(n\sum Y^2 - (\sum Y)^2)}}$$

Where

$\sum X$ = Sum of the scores of the odd number items

$\sum Y$ = Sum of the scores of the even numbers items

$\sum X^2$ = Sum of the squares of the odd number items
 $\sum Y^2$ = Sum of the squares of the even number items
 n = Number of respondents

The whole test of the scale was 862, which was highly significant at one % level indicating the high reliability of the scale.

6. Content validity of the perception and acceptance scale

The validity of the scale was established through content validity i.e., the representativeness or sampling adequacy of the content of a measuring instrument. The scale satisfies both these criteria as the clause of universe of statements that could be made about utilization of ICT tools in Agricultural Education formulated from the standards and also in consultation with experts. Care was taken for obtaining a fair degree of content validity. The calculated “t” value being significant for all the finalized statements of the score indicated that the perception statements of the scale have discriminating values. Hence, it seems reasonable to accept the scale as a valid measure of the perception and acceptance.

Results and Discussion

Administration and scoring of perception and acceptance scale

The final scale consisted of 38 statements (Table 2). The responses had to be recorded on a five point continuum representing strongly agree, agree, undecided, disagree and strongly disagree with scores of 5, 4, 3, 2, and 1, respectively for positive statements and vice versa for negative statements. The perception score on this scale ranges from a minimum of 38 to maximum of 190.

The perception and acceptance level was operationalized as level of perception of the teachers and students about utilization of ICT tools in Agricultural Education. The responses elicited from the teachers and students were quantified.

Conclusion

The scale to measure the perception of teachers and students about utilization of ICT tools in Agricultural Education was developed following Likert method. The scale be can used to measure perception of teachers and students about utilization of ICT tools in Agricultural Education as a scientific methods.

Table 1: Scale on measure perception of Agriculture University teachers and students about utilization of ICT tools in Agricultural Education

Sl. No.	Statements	Relevancy rating		
		RW	RP	MRS
I.	Prior knowledge			
1	Statistical analysis can be done with MS excel	0.85	85.33	4.27
2	Web portals can provide general or specific information and transaction facilities	0.83	82.67	4.13
3	Hard disk is a storage device	0.84	84.27	4.21
4	Voice over internet protocol (VOIP), instant messenger and social networking sites can be used to communicate online	0.83	83.47	4.17
5	CPU is called as brain of the computer	0.83	83.47	4.17
6	Voice SMS can be used to educate farmers on weather forecasts, production technology, pest and diseases.	0.82	82.40	4.12
7	ICT tools can be used for leaning, teaching, transfer of information and technology and e-marketing.	0.88	87.73	4.39
8	A popular way to learn without ever going to classroom is called as e-learning	0.84	83.73	4.19

II.	Usefulness			
9	Use of ICT gives me greater control over my work	0.82	81.60	4.08
10	Use of ICT at work place enable to accomplish task more quickly	0.85	84.80	4.24
11	Use of ICT would improve my work efficiency	0.87	87.47	4.37
12	Use of ICT would develops creativity	0.86	85.60	4.28
13	Use of ICT increases one's motivation	0.83	82.93	4.15
14	Use of ICT increases access to information across the world.	0.92	91.73	4.59
III.	Effectiveness			
15	ICT helps students/ teachers to be more creative and imaginative.	0.89	89.33	4.47
16	ICT helps to find related knowledge and information for learning.	0.90	90.13	4.51
17	ICT encourages to communicate more effectively with students/ teachers	0.88	87.73	4.39
18	ICT increases confidence to participate actively in teaching/learning	0.88	87.73	4.39
19	ICT tools helps teaching/learning more effective	0.84	83.73	4.19
20	ICT helps to broaden knowledge paradigm.	0.86	85.60	4.28
21	Use of ICT enables to express ideas and thoughts better.	0.82	81.60	4.08
22	Use of ICT promotes for best learning experience.	0.84	84.27	4.21
IV.	User friendly nature			
23	One is capable to use the computer in personnel and their own.	0.85	84.80	4.24
24	I have basic skills to operate a computer like saving files and creating folders	0.86	86.13	4.31
25	The ability to use MS Windows	0.86	86.13	4.31
26	I am capable of using computer applications such as word processing, power point, excels etc.	0.85	85.33	4.27
27	I have the basic skills to find my way around the Internet (e.g. using search engines, entering passwords)	0.87	86.93	4.35
28	I am ready to participate in online programmes	0.86	86.40	4.32
29	I am able to communicate effectively with others using online techniques.	0.84	83.73	4.19
30	Enables to participate in online surveys	0.86	85.60	4.28
31	Enhance ability to handle the smart phone for teaching/learning	0.88	88.27	4.41
32	I am able to use the internet services for my work independently	0.87	87.20	4.36
33	Enable to download or upload curriculum resources from/to websites or learning platforms for students to use	0.90	90.13	4.51
34	ICT teaches students how to behave ethically online	0.82	81.60	4.08
V.	Convenience			
35	ICT is quick in meeting information needs	0.91	90.93	4.55
36	ICT tools are comfortable to use	0.87	87.20	4.36
37	Use of ICT in teaching is very convenient	0.86	86.40	4.32
38	Use of computer suits my teaching needs	0.83	82.93	4.15
39	Computers brought positive impact in my teaching/learning	0.85	85.07	4.25
40	The agricultural subject requires more ICT tools	0.82	81.60	4.08
41	Class time is enough to allow effective use of ICT	0.83	82.93	4.15
VI.	Speed			
42	ICT makes the job of teaching/learning fast	0.90	89.87	4.49
43	ICT is best for spending leisure time	0.80	80.00	4.00
44	ICT speeds up discussion of the subject	0.81	81.33	4.07
45	ICT enable quick access to information.	0.90	90.13	4.51
46	ICT provide access to multimedia learning resources.	0.89	88.80	4.44
47	ICTs give all in guide way that learning can occur anytime.	0.82	81.87	4.09
48	Provides access to the wide source of information.	0.87	87.20	4.36
VII.	Accessibility			
49	Access to computer in the department as and when required	0.90	90.13	4.51
50	Access to printer and scanner in the department	0.85	84.80	4.24
51	Access to specialized ICT devices (Tablet, GPS, etc.)	0.80	80.00	4.00
52	Access to the internet/ network in the department is smooth without appreciable delay	0.84	84.00	4.20
53	One can use internet in our institution whenever needed	0.85	85.07	4.25
54	Access to computer at work is adequate	0.80	79.73	3.99
55	Access to other ICT (e.g. scanner, printers, CD burners, digital cameras) at work is adequate.	0.82	82.13	4.11
56	Adequate access to the internet for teaching/learning	0.86	85.60	4.28
VIII.	Integration			
57	I feel professionally competent as teacher because I can develop and use digital contents in my teaching	0.87	86.67	4.33
58	I feel professionally competent as teacher because I can operate ICT equipment in my teaching	0.83	82.67	4.13
59	I am satisfied with my job as teacher because I can develop and use digital contents in my teaching	0.88	88.27	4.41
60	I am satisfied with my job as teacher because I can operate ICT equipment in my teaching	0.84	83.73	4.19
61	I am satisfied with my job as teacher because I develop and use digital teacher training materials	0.82	82.40	4.12
62	There is a systematic sharing of pedagogical experience in use of ICT	0.83	82.67	4.13
63	University management supports us in understanding how the use of ICT can improve teaching	0.85	85.33	4.27
64	I can use subject-specific digital teaching aids in my teaching	0.85	84.80	4.24
65	I use ICT to make students more interested in different subjects and lesson contents	0.87	87.47	4.37
66	By using ICT, it is easier to motivate students	0.86	86.40	4.32

67	ICT contributes to make teaching varieties	0.87	87.20	4.36
IX.	Multimedia Utility			
68	Multimedia technology should be considered by the teacher as a device which saves explanation time in the Class hour.	0.87	86.93	4.35
69	I believe I can teach well even when multimedia technology is not available.	0.80	79.73	3.99
70	The major use of multimedia technology is to assist the teacher by enhancing his/her effectiveness in the classroom.	0.83	83.47	4.17
71	Use of multimedia enhance the quality of teaching/learning	0.86	85.60	4.28
72	I believe I can teach well when I use multimedia.	0.85	84.53	4.23
73	Students learn best when multimedia are used in the classroom	0.83	82.93	4.15
74	Multimedia are attractive towards the students' perception	0.83	82.93	4.15
75	Multimedia can extend the knowledge about a particular unit of the subject.	0.83	83.47	4.17
X.	Infrastructure			
76	Internet speed is sufficient in our campus.	0.78	78.40	3.92
77	Computers are fast enough to use for instructional activities.	0.81	81.33	4.07
78	There are sufficient licensed software programs	0.76	76.00	3.80
79	There are Sufficient computers in the college to meet the requirements of the teachers/students	0.81	81.33	4.07
XI.	Reliability / Security			
80	ICT is a valuable tool one can use in classroom.	0.88	88.00	4.40
81	I believe ICTs are powerful tools that helps in understanding of abstract content	0.86	86.13	4.31
82	I think one should use ICT in teaching-learning process	0.87	87.20	4.36
83	Use of ICTs in teaching-learning process makes curriculum more functional.	0.83	83.20	4.16
84	Video and sound recording during teaching and examinations is necessary for our safety.	0.78	77.60	3.88
85	It is better to have the Internet access on our tablets remotely blocked when needed	0.79	79.20	3.96
86	It is not safe to make friends with strangers on social media	0.79	78.93	3.95
XII.	Storage and retrieval of information			
87	ICT makes retrieval easier	0.87	86.93	4.35
88	ICT has multiple access and retrieval at a time	0.90	89.87	4.49
89	Speed in locating information resources	0.86	85.60	4.28
90	ICT enable to download as many documents as possible, unlike printed materials.	0.85	84.80	4.24
91	Accuracy in dictating errors when searching and retrieving information	0.80	80.00	4.00
92	Storage of retrieved information on external drive	0.84	84.27	4.21
93	Automatic arrangement of information resource databases	0.83	83.20	4.16
94	Flexibility in downloading and retrieving of information resource	0.86	86.40	4.32
95	ICT Saves time of teachers and students	0.92	92.27	4.61
XIII.	Complexity			
96	Computers make teaching of complex concepts easy	0.87	87.47	4.37
97	Use of computer fits well in my curriculum goals	0.86	86.13	4.31
98	ICT integration is simple to use in teaching	0.86	85.60	4.28
99	Learning to use ICT in teaching/learning is a challenge	0.77	77.33	3.87
100	ICT tools are convenient to use	0.85	84.80	4.24

RW= Relevancy Weightage, RP= Relevancy Percentage, MRS= Mean Relevancy Score

Table 2: Scale on measure perception of Agriculture University teachers and students about utilization of ICT tools in Agricultural Education 't' test

SI. No.	Statements	't' value
I.	Prior knowledge	
1	Voice over internet protocol (VOIP), instant messenger and social networking sites can be used to communicate online	6.71
2	Voice SMS can be used to educate farmers on weather forecasts, production technology, pest and diseases.	2.93
3	A popular way to learn without ever going to classroom is called as e-learning	3.28
II.	Usefulness	
4	Use of ICT gives me greater control over my work	3.50
5	Use of ICT increases one's motivation	2.31
6	Use of ICT increases access to information across the world.	2.45
III.	Effectiveness	
7	ICT helps students/ teachers to be more creative and imaginative.	2.54
8	ICT helps to find related knowledge and information for learning.	3.13
9	ICT increases confidence to participate actively in teaching/learning	3.58
10	Use of ICT promotes for best learning experience.	2.05
IV.	User friendly nature	
11	The ability to use MS Windows	1.88
12	I am able to communicate effectively with others using online techniques.	2.86
13	Enables to participate in online surveys	3.86
V.	Convenience	
14	ICT tools are comfortable to use	1.96

15	The agricultural subject requires more ICT tools	2.55
VI.	Speed	
16	ICT makes the job of teaching/learning fast	2.63
17	ICT enable quick access to information.	2.24
VII.	Accessibility	
18	Access to computer in the department as and when required	6.06
19	Access to printer and scanner in the department	2.66
20	Access to specialized ICT devices (Tablet, GPS, etc.)	4.30
21	Adequate access to the internet for teaching/learning	2.85
VIII.	Integration	
22	I feel professionally competent as teacher because I can develop and use digital contents in my teaching	3.60
23	I feel professionally competent as teacher because I can operate ICT equipment in my teaching	2.85
24	I am satisfied with my job as teacher because I can develop and use digital contents in my teaching	2.78
25	There is a systematic sharing of pedagogical experience in use of ICT	4.99
26	By using ICT, it is easier to motivate students	3.08
IX.	Multimedia Utility	
27	Multimedia technology should be considered by the teacher as a device which saves explanation time in the class hour.	2.09
28	Multimedia can extend the knowledge about a particular unit of the subject.	2.06
X.	Infrastructure	
29	Computers are fast enough to use for instructional activities.	5.79
30	There are Sufficient computers in the college to meet the requirements of the teachers/students	5.56
XI.	Reliability / Security	
31	I think one should use ICT in teaching-learning process	3.86
32	Use of ICTs in teaching-learning process makes curriculum more functional.	4.58
33	Video and sound recording during teaching and examinations is necessary for our safety.	2.65
XII.	Storage and retrieval of information	
34	ICT makes retrieval easier	2.32
35	Accuracy in dictating errors when searching and retrieving information	2.71
36	Automatic arrangement of information resource databases	2.33
XIII.	Complexity	
37	Use of computer fits well in my curriculum goals	3.13
38	Learning to use ICT in teaching/learning is a challenge	2.02

Table 3: Perception of Agriculture University teachers and students about utilization of ICT tools in Agricultural Education sent to the expert for their relevancy

SI. No.	Statements	Response					
		MR	R	U	S	W	R
I.	Prior knowledge						
1	Voice over internet protocol (VOIP), instant messenger and social networking sites can be used to communicate online						
2	Voice SMS can be used to educate farmers on weather forecasts, production technology, pest and diseases.						
3	A popular way to learn without ever going to classroom is called as e-learning						
II.	Usefulness						
4	Use of ICT gives me greater control over my work						
5	Use of ICT increases one's motivation						
6	Use of ICT increases access to information across the world.						
III.	Effectiveness						
7	ICT helps students/ faculty to be more creative and imaginative.						
8	ICT helps to find related knowledge and information for learning.						
9	ICT increases confidence to participate actively in teaching/learning						
10	Use of ICT promotes for best learning experience.						
IV.	User friendly nature						
11	The ability to use MS Windows						
12	I am able to communicate effectively with others using online techniques.						
13	Enables to participate in online surveys						
V.	Convenience						
14	ICT tools are comfortable to use						
15	The agricultural subject requires more ICT tools in teaching/learning						
VI.	Speed						
16	ICT makes the job of teaching/learning fast						
17	ICT enable quick access to information.						
VII.	Accessibility						
18	Access to computer in the department as and when required						
19	Access to printer and scanner in the department						
20	Access to specialized ICT devices (Tablet, GPS, etc.)						

21	I have adequate access to the internet for teaching/learning						
VIII.	Integration						
22	I feel professionally competent as teacher/student because I can develop and use digital contents in my teaching/learning						
23	I feel professionally competent as teacher/student because I can operate ICT equipment in my teaching/learning						
24	I am satisfied with my job as teacher/student because I can develop and use digital contents in my teaching/learning						
25	There is a systematic sharing of pedagogical experience in use of ICT						
26	By using ICT, it is easier to motivate students						
IX.	Multimedia Utility						
27	Multimedia technology should be considered by the teacher as a device which saves explanation time in the class hour.						
28	Multimedia can extend the knowledge about a particular unit of the subject.						
X.	Infrastructure						
29	Computers are fast enough to use for instructional activities.						
30	There are Sufficient computers in the college to meet the requirements of the faculty /students						
XI.	Reliability / Security						
31	I think one should use ICT in teaching/ learning process						
32	Use of ICTs in teaching/ learning process makes curriculum more functional.						
33	Video and audio recording during teaching/ learning and examinations is necessary for our safety.						
XII.	Storage and retrieval of information						
34	ICT makes retrieval easier						
35	Accuracy in dictating errors when searching and retrieving information						
36	Automatic arrangement of information resource databases						
XIII.	Complexity						
37	Use of computer fits well in my curriculum goals						
38	Learning to use ICT in teaching/learning is a challenge						

MR= Most Relevant, R= Relevant, UD= Undecided, SWR= Somewhat Relevant, NR= Not Relevant

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