

Study on knowledge and use of ICT by scientists of Agricultural University

■ N.D. Gore, B.T. Kolgane¹ and D.T. Khogare²

Department of Extension Education, College of Agriculture, Phaltan, SATARA (M.S.) INDIA

¹Department of Extension Education, College of Agriculture, KOLHAPUR (M.S.) INDIA

²Department of Home Science, Krishi Vigyan Kendra, Miraj, SANGLI (M.S.) INDIA

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ABSTRACT

Access of information and improved communication is a crucial requirement for agricultural development which is directly related to social and economic development. However it is observed that rural population still have difficulty in assessing crucial information in forms to make timely decision. There is gap between information rich and information poor is getting wider, new technologies generating possibilities to solve problem of rural poverty, inequality and getting opportunity to bridge gap between information rich and information poor to support sustainable development in rural and agricultural communities. Hence present investigation was undertaken with an objective to study the extent of knowledge and extent of use of various information and communication technologies by Scientists, Teachers and Extension workers in State Agriculture Universities and to study perception about information and communication technology facilities provided by State Agriculture Universities. Present study was conducted in Dr. P.D. K.V. Akola during the year 2005-006. For this investigation, respondents were selected randomly from colleges covered under university. Questionnaire was used for data collection. Data was analyzed by SPSS software developed by TISS, Mumbai. Present investigation showed that only half of respondents had high level of knowledge about ICT facilities. Hence, there is a need to improve this situation in further unless the teachers and scientists possessing adequate knowledge about ICT, its use can not be accelerated in fact efforts to me ICT also helps to improve knowledge and skill involved. More than half of the respondents, teacher and scientists were found to be in low and moderate use of ICT. The mean of utility perception had found to be 77.85. About 83.83 per cent of the respondents reported it as highly useful for collecting data, storing and processing data, secondly 77.50 per cent said that internet was highly useful to them, 24.16 per cent reported highly facility utility, E-mail for research purpose. Correlation showed that age, experience, training received, availability of material were highly significant with knowledge about ICT gadgetry where as qualification, post held, background, nature of work were non significantly correlated with the knowledge about ICT.

INTRODUCTION

Information Technology encompasses development and use of electronic and allied gadgetry for effective generation, documentation, processing, storage, retrieval and use of information for maximum and speedy output (Chatuvedi and Khare, 2004).

The convergence of information and communication technology includes commonly computer, Internet, ID-mail,

Mobile, WAP application etc, too often enhance to reach penetration of ICT facilities. Information Technology has been one of the most / ambitious field in the present world. Information Technology and Agriculture amalgamation caused our country to regulate overall economy and Trade. The country is having rapid computerization in different field of agriculture *i.e.* from \weather forecasting for crop production to protection of crop. Different IT Technologies like Remote Sensing Experts System, Database of research project, modeling

techniques, different agricultural calculators, integrated management are being extensively used. After the mechanization of Indian agriculture computerization will only support green revolution by efficient management of a agricultural research (Kolhe and Kamble, 2004).

Today Information Technology has revolutionalized the developing and planning process by making available an information from various sectors quickly and accurately like surging river. Information Technology emerged as a powerful tool and most significant achievement of 21st century.

ICAR websites (<http://www.icar.nic.in>) has been designed including organizations, research activities, agriculture research information system (ARIS), International linkages, publications offices, National Agricultural Technology Project (NATP), State Agriculture University (SAU) and announcement of Agricultural Scientists Recruitment Boards (ASRB) besides ARIS News (www.icar.nic.in).

A major initiative has been taken by developing Agriculture Research Information System (ARIS) in order to modernize and bring information management culture in National Agricultural Research System (NARS). The basic infrastructure required for linking all ICAR institutes and state: Agricultural Universities (SAU's) were already developed under National Agricultural Research Project (NARP I) by creating IANS and providing the E-mail connectivity. ARIS News provides much needed forum for exchange of ideas and highlight of the implementations of ARIS programme (Paroda, 1998).

Access of information and improved communication is a crucial requirement for agricultural development which is directly related to social and economic development. However it is observed that rural population still have difficulty in assessing crucial information in forms to make timely decision. There is gap between information rich and information poor is getting wider, new technologies generating possibilities to solve problem of rural poverty, inequality and getting opportunity to bridge gap between information rich and information poor to support sustainable development in rural and agricultural communities (Sharma, 2000). Hence present investigation was undertaken with an objective to study the extent of knowledge and extent of use of various information and communication technologies by Scientists, Teachers and Extension workers in State Agriculture Universities and to study perception about information and communication technology facilities provided by State Agriculture Universities.

METHODS

Present study was conducted in Dr. P.D. K.V., Akola during the year 2005-006. For this investigation, respondents were selected randomly from colleges covered under university. Questionnaire was used for data collection. Data were analyzed

by SPSS software developed by TISS, Mumbai.

OBSERVATIONS AND ANALYSIS

The main findings and discussion of the research were being presented theme wise below:

Knowledge about ICT facility:

Knowledge significantly defined as body of understood information possessed by scientists, teachers and extension workers in about information and communication technology. In the present study, knowledge means the body of understood information possessed by the respondents *i.e.* scientists, teachers and extension workers about information and communication technologies.

It is observed from Table 1 that 54.17 per cent of respondents possessed high level of knowledge about ICT, whereas 43.33 per cent of respondents had moderate level of knowledge and only 2.50 per cent of the respondents possessed medium level of knowledge about ICT. The average knowledge possessed by respondents was about 76.72 per cent. The findings are complimentary with the observations of Gaikwad *et al.* (2005). Only half of respondents had high level of knowledge about ICT facilities. Hence, there is a need to improve this situation in further unless the teachers and scientists possess adequate knowledge about ICT, its use can not be accelerated in fact efforts to me ICT also helps to improve knowledge and skill involved.

Table 1 : Distribution of the respondents according to their knowledge about the ICT

Sr. No.	Knowledge	Respondents	
		Number	%
1.	Low	00	00
2.	Medium	3	2.50
3.	Medium high	52	43.33
4.	High	65	54.17
	Total	120	100.00

Mean = (x) = 76.72

SD =14.38

Extent of use of ICT:

It is necessary to use information and communication technologies by scientists teachers and extension workers for their research and teaching purposes.

It is observed (Table 2) that majority of respondent *i.e.* - 47.50 per cent had medium high level of extent of use, 45.00 per cent of the respondents had high level of use while 7.50 per cent of the respondents had medium level of extent of use. Mean extent of use was found to be of 74.88 moderate user, thus prominent. If these facilities are provided by the university in each department it will help in increasing teaching and research effectiveness of scientists, teachers and extension

Table 2 : Distribution of the respondent according to their extent of use of ICT

Sr. No.	Extent of use	Respondents	
		Number	%
1.	Low	00	00
2.	Medium	9	7.50
3.	Medium high	57	47.50
4.	High	54	45.00
	Total	120	100.00

Mean = (x) = 74.88

SD - 13.97

workers. More than half of the respondent teacher and scientists were found to be in low and moderate use of ICT.

The observations from Table 3 show that 74.17 per cent of the respondents had relatively higher extent of use of these technologies for information retrieval or data updating and also data analysis. 75.00 of respondents used these information and communication technologies, for communication purpose with other scientists. Also 73.33 per cent of the respondents had used these technologies for finding references and searching details related to subjects. 72.50 per cent of the respondents used these technologies for E-mailing and for teaching purposes and 70.83 per cent of respondents used these technologies for presentation of research in seminars/conferences.

Table 3 : Purpose wise distribution of respondents according to extent of use

Sr. No.	Technologies used	Respondents	
		Number	Per cent
1.	Computer information retrieval or data updating	89	74.17
2.	Data analysis	89	74.17
3.	Comm. with other scientists	90	75.00
4.	For findings references	88	73.33
5.	For searching details related to subjects	88	73.33
6.	For E-mailing	87	72.50
7.	Report writing	77	64.17
8.	Printing	64	53.33
9.	Photo-printing	51	42.50
10.	Entertainment	44	36.67
11.	Seminars	85	70.83
12.	Presentations	86	71.67
13.	For data storage	29	24.17
14.	For correspondence	23	19.17
15.	For scanning	77	64.17
16.	Chatting	22	18.33
17.	Typing	32	26.67
16.	Research	85	70.83
19.	Teaching	87	72.50
20.	Slide showing	88	15.00

Utility perception:

Utility perception in the presents study has been defined as the perceived usefulness of information and communication technologies with regards to quality of information such as compatibility practicability users, friendliness and easy access.

Table 4 : Distribution of the respondents according to their utility perception

Sr. No.	Technology used	Respondents	
		Number	Perception
1.	Low	00	00
2.	Medium	16	13.33
3.	Medium high	34	28.33
4.	High	70	58.34
	Total	120	100.00

Mean = (x) - 77.85

SD = 21.72

Regarding utility perception of the respondents about information and communication technology, as observed from Table 4, majority of the respondents (58.34 per cent) had higher utility perception about information and communication technologies, whereas 28.33 per cent of the respondents had medium high level of utility perception about information and communication technologies. Relatively only 13.33 per cent of the respondents had medium utility perception about information and communication technology. The mean of utility perception was found to be 77.85.

Total utility perception of 35 ICT gadgetry was computed on three point continuum *i.e.* not useful, useful and highly useful (Table 5). About 83.83 per cent of the respondent reported it as highly useful for collecting data, storing and processing data, secondly 77.50 per cent said that internet was highly useful to them. 24.16 per cent reported highly facility utility, E-mail for research purpose. 75.00 per cent of the respondents perceived telephone for extension, purpose whereas 70.00 per cent of the respondents perceived high influence of television for the research and extension purpose.

It is observed from Table 6 that variables namely, qualifications, post held, background, nature of work were not significant whereas age, experience, training received, availability of material were positively and significantly related with knowledge of respondents about ICT gadgetry. It is obvious that with more number of trainings of maximum experience, easy access to ICT which increases knowledge thus the institutes should concentrate their aspects to promote ICT among teachers and scientists. Correlation showed that age, experience, training received, availability of material were highly significant with knowledge about ICT gadgetry whereas qualification, post held, background, nature of work were non-significantly correlated with the knowledge about ICT (Table 6).

It was observed from Table 7 that variable, age was

Table 5 : Frequency wise distribution of respondents according to their utility perception

Sr. No.	ICT facility	Purpose					
		Not useful		Useful		Highly useful	
		Number	%	Number	%	Number	%
Computer aids							
1.	Computer	0	0	21	16.67	100	83.83
2.	Internet	0	0	27	22.50	93	77.50
3.	E-mail	6	5	85	70.83	29	24.16
4.	Scanner	18	15	48	40.00	54	45.00
5.	CD	0		50	41.67	70	58.33
6.	CD - writer	49	40.83	46	38.33	25	20.83
7.	VHS-Movie camera	65	54.17	36	30.00	19	15.83
8.	Digital camera	37	30.83	56	46.67	27	22.50
Audio visual aids							
1.	Television	0	0.00	44	36.67	84	70.00
2.	Films	0	0.00	71	59.17	41	34.17
Audio aids							
1.	Radio	60	50.00	37	30.83	23	19.17
2.	Tape recorder	60	50.00	47	39.17	13	10.83
3.	Public address equipment	10	8.33	74	61.67	36	30.00
4.	Telephone	10	8.33	20	16.67	90	75.00
5.	VCR	51	42.50	58	48.33	10	8.33
Visual aids							
Projected aids							
1.	OHP	12	10.00	40	33.33	68	56.67
2.	Opaque projector	20	16.67	61	50.83	39	32.50
3.	Slide projector	20	43.33	56	46.67	12	10.00
4.	Film strip slide projector	65	54.17	42	35.00	13	10.83
Non-projected aids							
1.	Model specimen	41	34.17	55	45.83	24	20.00
2.	Chalk	7	5.83	63	52.50	50	41.67
3.	Funnel graph	40	33.33	59	49.17	21	17.50
4.	Photograph	16	13.33	64	53.33	40	33.33
5.	Blow-ups	37	30.83	61	50.83	22	18.33
6.	White -boards	52	43.33	46	38.33	22	18.33
7.	Display-boards	44	36.67	51	42.50	25	20.83
8.	Flash cards	49	40.83	50	41.67	21	17.50
Printed library							
1.	Sectional library	6	5.00	20	16.67	94	78.33
2.	Magazines	12	10.00	32	26.67	76	63.33
3.	News letters	17	14.17	72	60.00	31	25.83
4.	News papers	0	0.00	44	36.67	76	63.33
5.	Journals	0	0.00	45	37.50	85	70.83
6.	Books	6	5.00	20	16.67	94	78.33
7.	Periodicals	24	20.00	55	45.83	41	34.17
8.	Circular letter	42	35.00	46	38.33	32	26.67

Table 6 : Correlates of knowledge about ICT

Sr. No.	Correlates	Co-efficient of correlation (r)
1.	Age	0.3289*
2.	Qualification	0.1425 ^{NS}
3.	Post held	0.1121 ^{NS}
4.	Experience	0.2999*
5.	Background	0.083 1 ^{NS}
6.	Training received	0.3117-
7.	Nature of work	0.1123 ^{NS}
8.	Availability of material	0.4221*

0.05 level of Probability = 0.195* 0.01 level of Probability = 0.254*

NS=Non-significant

Table 7 : Correlates of extent of use of ICT

Sr. No.	Correlates	Co-efficient of correlation (%)
1.	Age	-0.159 ^{NS}
2.	Qualification	0.0608 ^{NS}
3.	Post held	0.0993 ^{NS}
4.	Experience	-0.1353 ^{NS}
5.	Background	0.1605 ^{NS}
6.	Training received	0.2040*
7.	Nature of work	0.066 ^{NS}
8.	Availability of material	0.3082**
9.	Extent of knowledge	0.3256**

0.05 level of Probability = 0.195* 0.01 level of Probability = 0.254*

negatively significant with extent, of use, whereas training received was significantly related with extent of use, availability of material and knowledge were highly significant in implementing use at 0.01 level with extent of use of the respondents. Whereas relation of qualification, post held, experience, background and nature of work were to be non significant with extent of use of respondents. This is observed that availability, easy access and high knowledge level help in increasing the use of ICT. The correlation showed that training received availability of material and knowledge were significantly related with extent of use about ICT where as age,

qualification, post held, experience, background, nature of work were non—significantly related with extent of use about ICT.

Conclusion:

Present investigation concludes that only half of respondents had high level of knowledge about ICT facilities. Hence, there is a need to improve this situation in further unless the teachers and scientists possess adequate knowledge about ICT. More than half of the respondent teachers and scientists were found to be in low and moderate use of ICT. The mean of utility perception was found to be 77.85. About 83.83 per cent of the respondents reported it as highly useful for collecting data, storing and processing data, secondly 77.50 per cent said that internet was highly useful to them 24.16 per cent reported highly facility utility, E-mail for research purpose. Correlation showed that age, experience, training received, availability of material were highly significant with knowledge about ICT gadgetry where as qualification, post held, background, nature of work were non-significantly correlated with the knowledge about ICT.

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