Impact of Web-Education on Knowledge and Symbolic Adoption of Farmers - An Experimental Study

P. Mooventhan[1] and H.Philip[2]

1. Scientist, National Research Centre on Meat, (ICAR), Hyderabad, 2. Professor, Open and Distance Learning, Tamilnadu Agricultural University, Coimbatore

Corresponding author email: agriventhan@yahoo.co.in

ABSTRACT

Today we live in the media dominant era. Computer is the greatest communication medium because of its popularity and its reach. The connectivity of the internet to different kind of people around the world is increasing steadily, like TV and Radio. The Internet based teaching technology such as ***web-education technology*** *is emerging as a potential tool and effectively contributes to sustainable agricultural development. With this background, the present experimental study was conducted in Coimbatore and Trichy districts of Tamil Nadu, India. From these districts the six villages; three villages from Coimbatore district and remaining three villages from Trichy district were selected at random. From each village 30 respondents were selected randomly. Totally one hundred and eighty respondents were selected. The respondents were expected to have a minimum educational qualification of 5th standard and above because web-education required basic literacy for better learning. The Tamilnadu Agricultural University (TNAU) website (www.tnau.ac.in) selected as a learning module for treatment. And they will have to undergo pre and post exposure knowledge test by the selected learning module. Educational status and mass media exposure exhibited a positive and highly significant relationship where as age and farm status had shown a negative association with knowledge gain. Correlation analysis revealed that the variables namely farm status and innovativeness had shown highly significant and positive relationship with symbolic adoption where as the farming experience had shown a negative and highly significant relationship with symbolic adoption.*

Key words *- Web-education, Knowledge gain, Symbolic adoption, Problems and Suggestions*

Access to Internet will soon be universal, and it can provide unrestricted low-cost access to information, as well as highly interactive distance learning. The Internet will not only facilitate interactions among researchers but also quickly improve their ability to communicate effectively with the potential users of their research knowledge (*M.S. Swaminathan, 2003)*

"Educating the people through web this process is called web-education. The World Wide Web provides new opportunities and hopeful future for distance education over the Internet and the distance education is becoming a widespread used for quite a long time through Newspapers, Radio and TV (*The Chronicle year book, 2005*). Nowadays mostly the World Wide Web (WWW) getting vital role in distance education, e-learning and distance learning since the networking technologies are emerging very rapidly in the media dominant era. The connectivity of the internet to different kind of people around the world is increasing steadily, like TV and Radio. The World Wide Web and other Internet–based collaborative modern communication technology tools have significantly enhanced the ability to train and educate people electronically.

Information provided through new communication technologies such as modern information technology gadgets should be need based, demand driven, site specific and should be in local language (*Anandaraja, N. 2002*). With this background the present experimental research study entitled, "Impact of Web-Education on Knowledge and Symbolic Adoption of Farmers – An Experimental Study was planned with following objectives:

1. To study the knowledge levels of agricultural web-education learners.
2. To study the symbolic adoption of agricultural web-education learners.

3. To find out the relationship between personal and socio-psychological factors of the learners with the knowledge gain and symbolic adoption.
4. To find out the problems faced by the agricultural web-education learners.
5. To find out the suggestions of the learners about agricultural web-education

METHODOLOGY

This study was conducted in Coimbatore and Trichy districts of Tamil Nadu, because these two districts had close proximity with agricultural institutions such as Tamil Nadu Agricultural University, Coimbatore; Forest College and Research Institute, Mettuppalayam and Anbil Dharma lingam Agricultural College and Research Institute, Trichy respectively. From these districts, the list of villages provided with computers and internet facilities were obtained from collectorates. Among the villages six villages *viz.*, Odanthurai, Chikkarampalayam and Marudur from Coimbatore district and Ediyapatti, Anthanallur and Navallur Kuttapattu from Trichy district were selected at random. From each of these villages, thirty respondents are selected with the use of simple random sampling. The respondents are expected to have a minimum educational qualification of 5th standard and above. They will have to undergo pre and post exposure knowledge test.

RESULT AND DISCUSSION

Effectiveness of selected learning module in terms of knowledge gain: The knowledge aspects of the selected subject matter areas (TNAU website) were exposed to the six experimental groups (Group I, Group II, Group III, Group IV, Group V and Group VI) through single treatment. The knowledge levels of the subjects before and immediately after exposure were assessed to find out the knowledge gain. The maximum attainable knowledge score was 31. The result of the selected groups knowledge gain is presented in Table 1

It could be seen from Table 1 that all the groups namely Group I, Group II, Group III, Group IV, Group V and Group VI had effective in terms of knowledge gain. From the result, in Coimbatore district the Group I (Maruthur) had highest (60.00 %) knowledge gain followed by Group II (Chikkarampalayam) 59.16 per cent and Group III (Odanthurai) 42.66 per cent and from Trichy district the Group IV (Anthanallur) had maximum (53.53 %) knowledge gain followed by Group V (Ediyapatti) 53.53 per cent % and Group VI (Navallur Kuttapattu) 40.06 per cent. Among the six groups, four groups namely Group I, Group II, Group IV and Group V had no significant different in knowledge gain. But the Group III and Group VI had minimum knowledge gain (42.66%) and (40.06%) respectively. Even through these groups got maximum score in the pre exposure knowledge test. It might be due to the fact of their close proximity with Forest College and Research Institute and Anbil Dharmalingam Agricultural College and Research Institute respectively.

From the Table 2, it is inferred that about 47.77 per cent of respondents were ready to adopt alternative cropping such as sweet sorghum, sugar beet, and jatropha as per the recommendation of TNAU website followed by 53.89 per cent of respondents were ready to adopt crop management practices, 54.44 per cent of respondents were ready to adopt agricultural produce processing technologies, 61.11 per cent of respondents

Table.1. Mean knowledge gain due to exposure to the treatment

S.No.	Groups	Name of the Villages	Mean knowledge gain		Mean knowledge gain	Percentage
			Pre exposure	Post exposure		
	Coimbatore District					
1.	Group I	Maruthur	4.12	22.12	18.00	60.00
2.	Group II	Chikkarampalayam	3.52	21.27	17.75	59.16
3.	Group III	Odanthurai	8.92	21.72	12.80	42.66
	Trichy District					
4.	Group IV	Anthanallur	4.12	21.07	16.95	56.53
5.	Group V	Ediyapatti	3.42	19.98	16.00	53.53
6.	Group VI	Navallur Kuttapattu	7.99	21.72	12.02	40.06

(n=30 for each group)

were ready to adopt chemical herbicides and 66.66 per cent of respondents were ready adopt post harvest technologies.

Further, nearly 70.00 per cent of respondents were ready to adopt organic farming procedure, 72.22 per cent of respondents were ready to adopt chemical pesticides, 76.11 per cent of respondents were ready to adopt farm machineries, 81.11 per cent of respondents were ready to use course material related to agricultural technologies, 81.66 per cent of respondents were ready to adopt recommended fertilizers and most of the respondents ready to adopt the technologies given in web-education course material for specific crops as per the recommendation of TNAU.

Table. 2. Effectiveness in terms of symbolic adoption

S. No	Questions	No.*	%
1.	Do you propose to use the alternative crops like sweet sorghum, atrophic, sugar beet recommended by TNAU website?	86	47.77
2.	Do you propose to use the crop management practices recommended by TNAU website?	97	53.89
3.	Do you propose to use the agril. produce processing technologies recommended by TNAU website?	98	54.44
4.	Do you propose to use the chemical herbicide recommended by TNAU website?	110	61.11
5.	Do you propose to use the post harvest technologies recommended by TNAU website?	120	66.66
6.	Do you propose to use the organic farming procedures recommended by TNAU website?	126	70.00

*(n=30 for each group)

Problems in utilizing agricultural web-education technology: It is necessary to study the constraints in any social research. The constraint analysis helps the planners, administrators, development workers, scientists and others to frame policies and to implement schemes. Hence the constraints faced by the farmers in utilizing web-education technology were studied. The multiple responses of constraints were worked out. The results are presented in Table 3.

Table 3. Problems expressed by agricultural web-education learners

S. No	Problems	No.*	%
1.	Lake of information in local language	180	100.0
2.	High cost for establishment	172	95.55
3.	Not suitable to illiterate people	169	93.88
4.	Difficult in handling of computer mouse	165	91.66
5.	Difficulty to type the URL to access the web page	160	88.88
6.	High cost for internet connection	157	87.22
7.	Lack of skill to use modern information technology gadgets	142	78.88
8.	Lack of familiarity towards modern information technology gadgets	140	77.77
9.	Lack of relevant information in the website	132	73.33
10.	Lack of prompt reply to online queries and clarification	97	53.88
11.	Inability to make or receive electronic payments	90	50.00
12.	Slow down loading and uploading of photos/files/ videos	82	45.55
13.	Lack of update information	75	41.66
14.	Difficulty in reading online information	62	34.44

(**Multiple response obtained*) (n=180)

The result could be observed from Table 3. The major problem as expressed by all respondents (100%) was lack of information in local language and this was due to the fact that most of the web information published in English, high cost for establishment (95.55%), illiterate people cannot use (93.88%), difficulty in handling of computer mouse (91.66%) and this might be due to lack of practice and proper training on the use of mouse in computer and its accessories, difficulty to type the URL to access the web page (88.86%) was expressed because all the URL addresses are exclusively in English language, high cost to connecting internet (87.22%) and this was due to the reason of unavailability of internet providers at village level, lack of skill to use modern information technology gadgets (78.88%) as most of the respondents lacked training on the use of modern gadgets, lack of familiarity (77.77%), lack of relevant information (73.33%), lack of prompt reply to online queries and clarification (53.88%), inability to make or receive electronic payments (50.00%), slow downloading and uploading of photos/files (45.55%), lack of update information (41.66%) and few per cent of

the respondents expressed that they had difficulty in reading online information this result coincided with the results found out by (*Senthilkumar, M. 2003*).

Suggestions for effective utilization of agricultural web-education technology : Any study would be complete if it gives suggestions for development in the field of investigation. The suggestions rendered by the respondents for effective utilization of web-education technology were studied. The results are presented in Table 4.

Table 4. Suggestions for effective utilization of agricultural web-education technology

S. No	Suggestion	No.*	%
1.	Information may be in local language	180	100
2.	Location specific information may be provided	172	95.55
3.	Training may be provided to learn computer in detail	170	94.44
4.	Regular update of website information	167	92.77
5.	Installation of software in tamil of word, excel, power point, e-mail can be installed in information	160	88.88
6.	Valarum vellanmai may be published in online kiosk	157	87.22
7.	Information kiosks may provide location specific weather data	152	84.44
8.	Linking of Village Information Centre with State Agricultural University, KVK and development departments	149	82.77
9.	On line marketing facilities for farm produce	137	76.11
10.	Keeping the agricultural website addresses on the desktop of computers in Village Information Centre	102	56.66
11.	Self Help Groups can run the information centre	91	50.55
12.	More number of information kiosk	71	39.44
13.	Use of video conferencing	51	28.33

(* Multiple response obtained) (n=180)

Suggestion rendered by the respondents could be seen from Table 4. Major suggestions were giving information in local language expressed by all the respondents (100.00%) for easy comprehension by all farmers, followed by location specific information (95.55%) to reach all farmers who are spread across the state and country with diversified climatic condition this result coincided with the results found out by (*Karunakaran, B. 2004*), training to operate computers (94.44%) due to digital divide among rural farmers on the usage of computer, regular update of website information (92.77%) to fulfill the latest and current agricultural information need of the farmers, software in tamil of word, excel, power point, e-mail may be installed in information kiosk (88.88%), valarum vellanmai may be published in online (87.22%), information kiosk may provide location specific weather data (84.44%), linking of Village Information Centre with State Agricultural University, Krishi Vigyan Kendra and development departments (82.77%), on line marketing facilities for farm produce (76.11%), keeping the agricultural website addresses on the desktop of computers in Village Information Centre (56.66%), Self Help Groups may run the information centre (50.55%), more number of information kiosk (39.44%) and very few per cent of the respondents suggested that use of video conferencing is required for effective utilization of web education technology.

CONCLUSION

The study revealed that the non-computer owning respondents lack skill to operate computer and to know about technologies given through web-education. So information kiosks should be installed in villages and skilled trainers should give proper and regular trainings. The results clearly depict that majority of the respondents were unaware of website-education, despite the fact that they are more interested to know about it. So, large scale awareness campaigns and mass media can be utilized in a big way to promote web-education technology.

The study revealed that respondents were satisfied with the tool web-site but not convinced with the technology existed on it. So the scientific community should take initiatives to evolve technologies, which would compromise farmers in terms of affordability and effectiveness. The study revealed that respondents are more satisfied with the web-education and transfer of technology through computers. Further, this finding has indicated that they are inclined towards accepting Cyber Extension. So the farm graduates who are unemployed can be manned in Information shops and can facilitate farmers to know timely, accurate information through World Wide Web.

The awareness level and utilization behaviour of websites was found to be low and this indicated that there is an urgent need for development and popularization of such websites. The variables such as educational status, mass media exposure, innovativeness, farm status and farming experience were found to act as critical variables. So, while preparing web-education in future, one should take care of above variables. Public and private computer training institutions and entrepreneurs may be entrusted with the task of opening information clubs on partnership with farm association to teach, train farmers and keep away their fear in using this new technology in rural areas. This may be done as a Govemment policy initiation.

Paper received on : August 14, 2011
Accepted on : November 12, 2011

REFERENCES

1. Anandaraja, N. (2002). Developing Farmer Friendly Interactive Multimedia Compact Disc and Testing its Effectiveness in Transfer of Farm Technology. Ph.D. Thesis (unpub.), TNAU, Coimbatore.
2. Anonymous (M.S. Swaminathan) (2003). http://www.mssrf.org
3. Karunakaran, B. (2004). A Study on the Potential of Modern Information Technology Gadgets for Agricultural Development. M.Sc. (Ag.) Thesis (unpub.), TNAU, Coimbatore.
4. Senthilkumar, M. 2003. Field Testing Cyber Extension Techniques for Transfer of Farm Technology-A Feasibility Study. Ph.D. Thesis (unpub.) TNAU, Coimbatore
5. The Chronicle year book, 2005. Information Technology. chronicle publication private Ltd. New Delhi.

******