

Tribal Farmers' Perceived Constraints in the Usage of Modern Multimedia Communication Technology Gadgets

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ABSTRACT

An experimental study was conducted to explore the constraints involved in learning process through developed Interactive Educational Multimedia Module (IEMM) on Good Dairy Farming Practices (GDFPs) of tribal dairy farmers of Chhattisgarh state. In this study, IEMM module was developed with 25 digital video documentaries about GDFPs which include breeding, feeding and healthcare, management and advances in dairy. This IEMM module was exposed to the respondents to create awareness about dairy technologies in turn to accelerate the adoption rate for GDFPs. Out of 27 districts in Chhattisgarh, three districts namely Surajpur, Surguja and Balrampur were selected for the study based on the predominance of dairy tribal respondents population. From each district, four villages were selected and from each village 25 dairy tribal respondents were selected. Thus 300 respondents were selected for exploring the constraints involved in e-learning process through IEMM. The study revealed that majority (87.00%) of the IEMM learners expressed the lack of familiarity towards modern information technology gadgets as the major constraints and it ranks first in the cognitive constraints followed by lack of skills to use advanced ICT gadgets. With respect to economical constraints, majority (87.00%) of the IEMM learners reported lack of subsidies or free scheme to purchase advanced communication tools and services such as computer and internet as the major constraints followed by high cost for establishment, and lack of free training to learn modern ICT gadgets.

Information and communication technology have always mattered in education. e-learning is an emerging field focusing on the enhancement of rural development through improved information and communication processes. Empowerment of poor people with information and communication modules and services will increase their standard of living as well as protect their food security and livelihoods. Modern communication

technologies when applied to conditions in rural areas can help improve communication, increase participation, disseminate information and share knowledge and skills. However, it is observed that the rural populations still have difficulty in accessing crucial information in order to make timely decisions. There is a concern that the gap between the information rich and information poor is getting wider. New information and

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communication technologies are generating possibilities to solve problems of rural poverty, inequality and giving an opportunity to bridge the gap between information rich and information poor. The challenges are not only to improve the accessibility of communication technology to the rural population but also to improve socio-economic status and its relevance to local development (Balit *et al.*, 1997). ICT gadgets are playing vital role in reaching the unreached. Among the different ICT gadgets, an IEMM would give better results in learning process towards any subject matter. Hence, this study focused on development of an IEMM module with high definition 25 video documentaries for GDFPs. Further the study mainly focused on constraints encountered by the e-learners in the study area.

Multimedia is a woven combination of text, graphic, art, sound, animation and video elements. When you allow an end user the viewer of a multimedia project to control what elements are delivered and when, it is interactive multimedia (Swanson *et al.*, 1990). If you are stimulated with audio, you will gain about 20 per cent retention rate that of audio visual is up to 30 per cent and in an interactive multimedia presentation, where you are really involved, the retention is as high as 60 per cent (Aeron, 1998). Keeping this idea in mind the present study has been undertaken to analyse the different constraints involved in IEMM based e-learning process among dairy tribal respondents in Chhattisgarh state of India.

METHODOLOGY

Chhattisgarh state has been selected purposively based on the highest tribal population in the mainland of India. Out of 27 districts of the state, three districts namely Surajpur, Surguja and Balrampur were selected through random sampling method. Subsequently, from each district, four villages had been selected and from each village, 25 tribal farmers were purposively selected based on minimum one milch animal and posses adequate educational qualification to undergo the e-learning of the prepared educational module to explore the constraints involved in e-learning process for IEMM module in the study area. IEMM is a product of digital computer-based systems which respond to the user's interactions by presenting the subject matter content (Good Dairy Farming Practices) through navigations, text, video clips, audio clips, images, animated elements, hyperlinks, charts, graphics elements, enriched media etc. It helps to educate the user about a technology or process through interactive mode and can be stored and operated from any type of storage medium and can be accessed over online as well as offline mode. The components of IEMM have been broadly classified in to two major parts *viz.* technical component and subject matter component. Technical component of the IEMM describes the step by step procedure, techniques, tools and software used to develop the module. On the other hand, subject matter component covers the Good Dairy Farming Practices which needs to be disseminated to the target group.

Constraints have been studied in two dimensions *viz.*, cognitive constraints and economic constraints.

FINDINGS AND DISCUSSION

Constraints involved in learning process will pave the way for further development in any educational process. Further, constraint analysis helps the planners, administrators, development workers, scientists and others to frame policies and to implement developmental schemes. The perceived constraints of e-learners towards IEMM and modern ICT gadgets are presented in Table 1.

From Table 1 it could be seen that majority (87.00%) of the IEMM learners expressed the lack of familiarity towards modern information technology gadgets as the main constraints and it ranks first in the cognitive constraints list followed by lack of skills to use advanced ICT gadgets, 79.00 percent corresponded to difficulty in handling computer mouse, 70.33 percent experienced cyber phobia, little less than three-fourths (64.33%) felt difficulty in reading onscreen text, 67.30 percent sensed lack of feedback system in IEMM, 67.30 percent perceived the strangeness of the subject matter content, 37.66 percent felt lack of update system in IEMM, 32.00 percent perceived the long time taken by the computer/DVD player read HD videos of IEMM and 20.66 percent expressed language (Hindi) as a main constraint among the cognitive constraints in using IEMM. With respect to economical constraints, majority (87.00%) of the IEMM learners hinted out that

lack of subsidies/free scheme to purchase advanced communication tools and services such as computer and internet as the main constraint and it ranks first in the economical constraints list followed by high cost for establishment, lack of free training to learn modern ICT gadgets, unavailability of public sector infrastructure to access IEMM (E.g. Information kiosk) and low production system (extensive dairy farming) as major economic constraints.

In view of the above depicted results, respondents opined that the highly constraint is lack of facility towards modern ranked information technological gadgets, which clearly shows the poor infrastructure facilities and backwardness of the study area. Though being a newly formed state, which occupies the lowest rank in Human Development Index (HDI) there is an urgent need to initiate pro-poor interventions to enhance their socio-economic upliftment of the rural households. Cyberphobia, strangeness of the subject matter and lack of skills to use advanced gadgets constraints showed their poor exposure and meagre familiarity with ICT tools. It should be noted that, this experimental study also gave little acquaintance of Dairy Innovations through Educational Multimedia. State Animal Husbandry Department authorities and other stakeholders should take prompt initiations of the said proven technologies to the field level.

In Chhattisgarh, Land Reforms Act had paved the way for Government to distribute

Table 1.
Perceived Constraints Towards Modern ICT Gadgets and IEMM (n=300)

Sl.No.	Constraints	MC*	SWC*	NC*	Rank
I.	Cognitive Constraints				
1.	Cyber phobia	211 (70.33)	66 (22.00)	23 (7.66)	IV
2.	Difficulty in handling of computer mouse	237 (79.00)	29 (9.66)	34 (11.33)	III
3.	Language exposure (Hindi)	62 (20.66)	37 (12.33)	201 (67.00)	X
4.	Lack of familiarity towards modern information technology gadgets	261 (87.00)	8 (2.66)	31 (10.33)	I
5.	Lack of skills to use advanced ICT gadgets	253 (84.33)	21 (7.00)	26 (8.66)	II
6.	Difficulty in reading on screen text	193 (64.33)	48 (16.00)	59 (19.67)	V
7.	Lack of feedback system in IEMM	124 (41.33)	65 (21.66)	111 (37.00)	VI
8.	Long time taken by the computer/ DVD player read HD videos of IEMM	96 (32.00)	79 (26.33)	125 (41.66)	IX
9.	Lack of update system in IEMM	113 (37.66)	41 (13.66)	126 (42.00)	VIII
10.	Strangeness of the subject matter contents	123 (41.00)	35 (11.66)	142 (47.33)	VII
II.	Economical constraints				
1.	High cost for establishment	216 (72.00)	37 (12.33)	47 (15.66)	II
2.	Unavailability of public sector infrastructure to access IEMM (E.g. Information kiosk)	176 (58.66)	48 (16.00)	56 (18.66)	IV
3.	Lack of free training to learn modern ICT gadgets	203 (67.66)	47 (15.66)	50 (16.66)	III
4.	Low production system (extensive dairy farming)	186 (62.00)	62 (20.66)	52 (17.33)	V
5.	Lack of subsidies/free scheme to purchase advanced communication tools	252 (84.00)	18 (6.00)	30 (10.00)	I

the forest lands to the tribal people. These land dwellers and forest communities were still dependant on natural resources for their livelihood. Despite free land and forest resources, respondents are availing Government subsidies and free schemes for their daily odds. The Government should take necessary infrastructure facilities in backward areas and much emphasis to be given for "Digital India" mission and skill development training to the needy which in turn enhance their potential ICT access and usage. And overcoming constraints faced by the e-learners, policy makers and concerned officials should be given priority for their capacity building through high public investment in this sector. To conclude, there is an imminent need to intensify dairy farming in order to achieve the higher milk production for food and nutritional security of the end users through various ICT based gadgets.

CONCLUSION

Though Government has provided free land to the respondents, it is the need of hour to

develop required infrastructure, basic civic amenities and necessary information technology services to fulfil the modern demand driven information needs to minimise the knowledge gap to improve their livelihood. Therefore, different stakeholders in development activities should initiate appropriate technological interventions thorough ICT gadgets to reach the unreached.

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