Learning Styles for Designing Distance Learning Modules for Farmers of Hill Districts of Uttarakhand

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ABSTRACT

The aim of this study is to identify the relationship between socio-personal and communication characteristics and learning styles for designing distance learning modules for farmers of hill districts of Uttarakhand. The total population of the study is composed of 120 vegetable growers of four hill districts of Uttarakhand state comprising of Kumaon and Garhwal region. The Kolb's Learning Styles Inventory and semi structured interview schedule was used as the research tools. Respondents' socio-personal and communication characteristics and learning styles and the relationships between these variables were measured by using per centage and frequency and chi-square analysis respectively. The results on learning styles reveled that the majority of the participants adopted accommodating and assimilating learning styles. The results revealed a meaningful relationship between learning styles and socio-personal profiles.

Keywords: Learning style; Vegetable growers; Uttarakhand; Socio-personal; Relationship;

More than three-fourth of Uttarakhand's total population depends upon agriculture for their livelihood and the economy is predominantly dependent on hill agriculture. However, the land holdings are small and fragmented with limited irrigation facilities. Soil and water conservation is another issue for inclusive development. *Raut and Sharma (2009)* stated that agriculture development of Uttarakhand is determined by cereal, vegetable, fruits, animal husbandry, forestry, etc. The farmers in hills have small size of landholding, using traditional methods of crop production and mostly family labour is employed for performing various operations. For physical, geographical and environmental reasons, the scope for agricultural policies based on modern input-intensive agriculture is severely constrained in the hill regions. As a result, the majority of the rural population in the hills either survives on subsistence agriculture or migrates to other parts of the country for employment. Currently fruits and vegetables account for 27.2 per cent of the agricultural Gross Value of Output, less than a per centage point higher than the

national average of 26.7 per cent. *Birthal and Joshi (2007)* stated that income in India from staple crops is inadequate, so farmers supplement with off-farm and non-farm income, and increasingly grow high-value crops such as vegetables.

It is important to disseminate information about new technologies so that farmer is able to make use of latest agricultural developments. There also existed a gap between research findings and the need of the farmers. *Raut (2005)* stated that about 73 per cent respondents need information related to agriculture followed by horticulture (59%), animal husbandry (18%). The study also revealed that 84 per cent of respondents were interested to join need based courses in agriculture through Distance learning. It is true with the geographical condition of the state that everyone cannot be benefitted through single method of imparting agricultural information. *Ansari (2002)* expressed that in country like India with varied geographical terrain, high population density, availability of technology, accessibility to school education and socio-economic

backgrounds, no single model of learning package, delivery system and monitoring mechanism can be successful everywhere and for everyone. The socio-economic, personal, communication characteristics, learning styles and the constraints of every individual are different. The planning of distance learning module for the target group should consider these variations which exist among people while designing the content of module. *Kelly (1990)* suggested that careful planning is crucial for delivery of distance learning courses. Needs of the learner are of utmost importance to the planning of the distance education courses.*Rausaria and Bhushan (2001)* revealed that special care should be taken to ensure academic standard while preparing the course materials. The common model for course design, development, and instruction in most open universities worldwide contains paradoxes (*Guri-Rosenblit, 2005*), the most central of which is the fact that courses are developed and written by experts who do not teach them and that the actual instructors of the courses are not involved in writing the textbooks and the learning guides. As pointed out by various scholars (*Guri-Rosenblit, 2005; Lazenby, 2003*), this kind of course-delivery model creates a gap between the course developer, the course instructor, and the students and has a negative effect on the learning process and on student satisfaction (*Swan, 2001; Bates & Khasawneh, 2007*). So while preparing any course content or module the background variable must be taken care. It is essential that these resource poor farmers' need may be addressed by designing appropriate distance learning module according to their requirements. Hence, the present study was proposed with the specific objectives

i.   To study the personal, socio-economic and communication characteristics of vegetable growers of hill regions of Uttarakhand,

ii, To assess the information needs and learning style of vegetable growers of hill regions of Uttarakhand

iii. To find out relationship between personal, socio-economic and communication characteristics and learning styles of vegetable growers.

METHODOLOGY

The study was conducted in Uttarakhand state comprising of both Kumaon and Garhwal region. Out of the six districts of the Kumaon region, Nainital and Champawat districts and Rudraprayag and Tehri Garhwal districts were selected out of seven districts of the Garhwal region on the basis of productivity of vegetables. Krishi Vigyan Kendra (KVK) of each selected district was chosen purposively and one adopted vegetable growing village from each KVK was selected purposively. All the vegetable growing respondents were selected by using census method. The data for the investigation were collected from 120 respondents who were actively engaged in vegetable cultivation. The data were collected with the help of semi structured interview schedule. *Kolb (1986)* Learning Style Inventory was used for measuring the learning style of the respondents. Four types of learning styles were analysed as Diverging (CE) Assimilating (RO) Converging (AC) and Accommodating (AE). The relationship among the selected characteristics (includes personal, socio economic and communication characteristics) and learning styles of vegetable growers as perceived by the respondents have been determined by computing the correlation coefficients (r value) of the respondents. The correlation coefficient (r value) determined the degree of relationship among the variables. The variables were categorized as dependent and independent because some variables were dependent in some cases and independent in other cases. The data collected were coded, tabulated, analyzed and interpreted with the help of appropriate procedures and statistical techniques.

RESULTS AND DISCUSSION

Socio personal characteristics : Age refers to the chronological age of the respondents at the time of investigation expressed in terms of completed year. Table 1 shows that maximum respondents (70.00%) come under middle age group followed by old (15.84%) and young (14.16%) age group. In line with the finding *Raut (2005)* also reported that majority of the respondents were middle age followed by young and old respectively. Education is defined as the level of systematic and formal education which the respondents achieved in a school/ institution. The data relating to the educational status of the respondents as depicted in Table 1 cleared that 30.83 per cent of the respondents were having primary education followed by middle level (26.67%) and Intermediate and more (20.00%) where as 18.33 per cent of the respondents have education upto high school. Few of the respondents (4.17%) were illiterate.

Uttarakhand state is having literacy rate about 72.28% so the result of the present study also reveals that most of the respondents were literate and very few of them were illiterate. The year of experience refers to the duration in numbers of completed years since respondents' involvement in vegetable cultivation. It is evident from Table 1 that maximum number of the respondents (48.34%) belonged to medium category of experience in the enterprise, followed by 38.33 per cent with high category. A few respondents (13.33%) come under low category. In agreement with the study, *Yadav, N. (2008)* in her study that most of the respondents (42.50%) belonged to middle category of experience followed by 40.83 per cent high and 16.66 per cent belonged to young category. Marital status refers to the marital status of the respondents as married or unmarried. Table 1 reveals that majority of the farmers were married (85.00%) followed by unmarried (13.33%). The findings of the present study are supported by *Yadav, N. (2008)* that majority of the respondents were married followed by unmarried. This may be due to the findings that majority of the respondents were from middle and old age group. Land holding represents the status and prosperity of an individual/ family in the society in terms of possession of cultivated land. The data presented in Table 1reveals that a majority of the farmers were small farmers (53.33%) having land holding of one to two hectares followed by marginal (40%). Very few of the respondents come under medium (5%) and large (1.67%) category of land holding. The reason behind this might be that in hilly area, the land is scattered and divided in the families so maximum number of the farmers were marginal and small. Only few of the farmers had medium and large land holdings.

Caste refers to the hierarchical social status or position of an individual either acquired by heredity or conferred upon by the society. The caste distribution of the vegetable growers is mentioned according to the classification given by Government of India. The data in Table 3 inferred that most of the respondents (78.34%) belonged to general category which included Brahmins and Thakur followed by other backward caste (15.83%) and Scheduled caste (05.83%) including Gorkhaali, and Jatav. Source of earning is the source of occupation opted by the respondents for earning their livelihood. The data in Table 1 indicates that all the respondents

Table 1. Distribution of respondents according to their socio personal characteristics (N=120)

Variables	Categories	No.	%
Age	Young (<22 years)	17	14.16
Mean=33.71	Middle (22-45 years)	84	70.00
S.D.=11.41	Old (>45 years)	19	15.84
Education	Illiterate	05	04.17
	Primary	37	30.83
	Middle level	32	26.67
	High school	22	18.33
	Intermediate and more	24	20.00
Year of	Low (<5 years)	16	13.33
experience	Medium (5-9 years)	58	48.34
	High (> 9 years)	46	38.33
Marital status	Unmarried	16	13.33
	Married	102	85.00
	Widow	2	01.67
Land Holding	Marginal (<1 ha)	48	40.00
	Small (1-2 ha)	64	53.33
	Medium (2-4 ha)	6	05.00
	Large (>4 ha)	2	01.67
Caste	Scheduled Caste	07	05.83
	Other Backward Caste	19	15.83
	General	94	78.34
Source of	Agriculture	120	100.00
Earning	Unskilled	24	20.00
	Skilled worker	71	59.17
	Business	57	47.50
	Service	42	35.00
Social	Cooperative society	28	23.33
Participation	Farmers forum	16	13.33
	Youth club	14	11.67
	Dairy cooperative	06	05.00
	Panchayat membership	38	31.67
	No Membership	46	38.33

(100 %) were engaged in agriculture followed by skilled workers (59.17%), business (57.50%) and services (35.00%) as their source of earning. Only 20 per cent were found to be unskilled worker. It might be because of the fact that the social status of an individual is directly linked with the source of earning which mainly depended upon the factors like higher education, higher income, high ambition, and multiple avenues for employment. Social participation refers to the degree to which an individual is voluntarily associated with organization, one who has more contact with the organization and even outside people are supposed to be having a broad outlook and more prone to change. It is evident from table 1 that 31.67 per cent of the respondents were engaged in

socio-political institutions like Panchayat followed by 23.33 per cent in co-operative societies, 13.33 per cent in societies like farmers forum and 11.67 per cent of the respondents were involved in various Youth clubs like Yuvak Mangal Dal and Yuvati Mangal Dal. Merely Five per cent of the respondents were involved in dairy co-operatives. The present findings are in line with the study conducted by *Yadav, N. (2008)* that 33.33 per cent of the respondents were involved in social and political institutions without holding any post followed by 30 per cent of them held post in social and political institutions and 29.16 per cent of the respondents were to collect money to be distributed money for social upliftment.

Socio economic status: It refers to the status and the position of the respondents' family in the society it is apparent from Table 2 that most of the respondents 63.34 per cent had medium level of socio economic status (SES) followed by upper level (23.33%) and lower Socio Economic Status (13.33 per cent). Thus the analysis of the figures brought out the fact that majority of the respondents were laid in medium level of SES. The results of the present study are in accordance with the findings of *Raut (2005)* reveals that most of the respondents (74.50%) had medium socio-economic status followed by low and high socio-economic status that was 16.60 per cent and 8.82 per cent respectively.

Table2. Distributions of respondents according to socio economic status (N=120)

Level of SES	Categories	No.	%
Lower class	Less than 19	16	13.33
Middle class	19-35	76	63.34
Upper class	More than 35	28	23.33
SES-Mean=27.85, S.D.=8.57			

*Communication characteristics:*Communication behaviour of respondents was divided into four aspects i.e. extension agency contact, information seeking behaviour, information processing behaviour and information sharing behaviour.

Extension agency contact refers to the frequency of contact of the respondents with the personnel of different extension agencies (public/private) to get information related to agriculture and allied activities. It is evident from Table 3, that majority of respondents (63.33%) had medium level of extension agency contact, followed by low extension agency contact (22.50%) and high extension agency contact (14.17%). Majority of

the respondents were in contact with extension agencies because these villages were adopted by the Krishi Vigyan Kendras of the respective districts. The data in Table 3, shows that majority of respondents (65.00%) had medium level of information seeking behaviour, followed by low level of information seeking behaviour (23.33%) and high level of information seeking behaviour (11.67%). Majority of the farmers sought information from progressive farmers of their own village as well as from the KVK scientists. *Raut (2005)* reported that majority of respondents (62.74%) belonged to medium category followed by 21.56 per cent who belonged to low category. Information processing behaviour refers to the methods and ways of preserving the information obtained from anywhere by the respondents. As shown in Table 3 reveals that majority of respondents (57.50%) had medium level of information processing behaviour, followed by low level of information processing behaviour (30.00%) and high level of information processing behaviour (12.50%). Most of the farmers processed the information through remembering and documenting the literature. Some farmers also maintained the file for processing the information.

The data presented in Table 3 reveals that a majority of respondents (61.66%) had medium level of information sharing behaviour, followed by low level of information sharing behaviour (26.67%) and high level of information sharing behaviour (11.67%). Majority of the respondents shared the information with their relatives, neighbours and with the needy persons of their locality. The results are line with the findings of *Raut (2005)* that 52.94 per cent of respondents had medium information sharing behaviour followed by 24.50 per cent and 22.54 per cent of respondents had high and low information sharing behaviour respectively.

The finding regarding communication characteristics shows that majority of the respondents had medium extension agency contact, information seeking behaviour, information processing behaviour and information sharing behaviour.

Learning style of the farmers : Learning styles are various approaches or ways of learning. It involves educating methods, particular to an individual that are presumed to allow an individual to learn best. It is important for any educational or training situation to know the styles and ways of learning of their clients. In the present study, an effort was made to find out the

Table 3. Distribution of respondents according to communication behaviour (N=120)

Category	Status	No.	%
Extension Agency	Low	27	22.50
Contact	Medium	76	63.33
	High	17	14.17
Information Seeking	Low	28	23.33
Behavior	Medium	78	65.00
	High	14	11.67
Information	Low	36	30.00
Processing Behavior	Medium	69	57.50
	High	15	12.50
Information Sharing	Low	32	26.67
Behavior	Medium	74	61.66
	High	14	11.67

Table 4. Distribution of farmers according to their learning style (N=120)

Category	No.	%
Diverging (CE)	05	04.16
Assimilating (RO)	42	35.00
Converging (AC)	20	16.67
Accommodating (AE)	53	44.17

Table 5. Relationship of socio personal and communication characteristics with learning styles

Variables	Correlation coefficient (r)
Age	0.195*
Years of experience	0.011
Education	-0.220*
Marital status	0.046
Land holding	0.158
Caste	0.208*
Earning source	0.122
Social participation	-0.050
SES	0.073
Extension agency Contact	0.211*
Information Seeking Behaviour	-0.032
Information Processing Behaviour	0.025
Information Sharing Behaviour	-0.048

* Significant at 0.05 level of probability

learning styles of the vegetable growers in order to design distance learning module to bridge the information gap in their learning situation. *Grasha (2002)* stated that learning styles are "personal qualities that influence a learner's ability to acquire information, to interact with peers and the instructor, and otherwise to participate in learning experiences. Learning styles are various approaches or ways of learning. It involves educating

methods, particular to an individual that are presumed to allow an individual to learn best. Table 4, clearly indicates that maximum 44.17 per cent farmers were found to have Accommodating type of learning style where as 35 per cent of the farmers were found to have Assimilating type of learning style and 16.67 per cent were having Converging type of learning style. Only 4.16 per cent of the farmers were fallen in the Diverging type of learning style. This tends to be because most of the farmers were in touch with the Krishi Vigyan Kendras, extension personnel and District Horticulture Officers who generally guide them.

Most of the farmers had more risk taking, ability to get things done and influence people and events through action. Some of the farmers learned through careful observation before making a judgment, viewing things from different perspectives. Few of the farmers believe in logical analysis of ideas, systematic planning and acting on intellectual understanding of a situation whereas very few of the farmers learned through specific experiences and relating to people. The reason might be that most of the farmers were engaged in the agricultural work for the last so many years and they learnt field practices by doing and experimenting themselves. Some of the farmers might learnt by observing and hearing because they were frequently in contact with extension personnel.

Relationship between personal, socio-economic and communication characteristics with learning styles of farmers : It is evident from Table 5 that learning style had positive and significant relationship with personal and socio economic characteristics, viz. Extension agency Contact (r=0.211*), caste (r=0.208*) and age (r=0.195*). It is clear from Table 24 that respondents with higher extension agency contact having higher cast & age had learning styles and they understand and learn the vegetable cultivation practices easily. While negative significant correlation was found between learning style and education (r=-0.220*). *Leidener and Jarvenpaa (1993)* indicated that learner characteristics are among the main variables that affect the quality of learning.

The null hypothesis (H0) stating that there exists no relationship between personal characteristics and Learning styles of the vegetable growers may be rejected, as per the results obtained in Table 5, favoring the acceptance of corresponding alternative hypothesis. The

alternative hypothesis like (H2) could be rejected against the acceptance of the corresponding null hypothesis stating that there exists no relationship between Socio Economic Status and Learning styles of the vegetable growers as revealed in Table 5. The null hypothesis (H0) stated as, There exists no relationship between communication characteristics and learning styles of the vegetable growers proved to be false. Then in that case the corresponding alternative hypothesis can be accepted.

CONCLUSION

The results depicted that majority of the respondents dominated by middle age group, married, under middle level of experience in the enterprise, skilled workers, small farmers, belonged to general caste and had primary and middle level of education. Maximum numbers of the respondents were involved in social and political institutions with and without holding any post, belonged to medium family size possessed agricultural instruments/ electrical instruments/ animals and had pucca house. Majority of the respondents came under the medium level of socio economic status (SES) group. The findings revealed a meaningful relationship between learning styles and Socio-personal profiles which should be considered at the time of designing of any of the learning modules for farmers of hill regions.

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