

# Are Agricultural Officers Competent to Use Audio Visual Aids for Extension work in Punjab, Pakistan?

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## Abstract

Agricultural extension agents play a significant role in the domestic and socio-economic life of farming community such that national development is not possible without developing this important segment. Pakistan is an agricultural country. However, agricultural production of the country is much lower than that of many other countries. This is an era of information wave which requires the generation dissemination and use of information rapidly. The current technological developments will have a big impact on the future direction of extension and rural development programs realizing the abruptness of the new technologies. The purpose of the study was to identify and prioritize the training needs of agricultural extension agents in Punjab. The purpose of the study was to identify and prioritize the training needs of agricultural extension agents in Punjab. The present study has been designed which represents descriptive survey research. Out of 341 agricultural officers, a random sample of 181 was taken. The panel of experts established face and content validity of research instruments. The Cronbach's Alpha calculated for use of audio visual aids (0.87). The questionnaire was mailed to the respondents. Data were analyzed by SPSS "Statistical Package for Social Sciences". The Discrepancy values based on the mean perceptions of Agriculture Extension Agents were positive values for all 11 competencies ranging from lowest value 0.54 to highest value 1.46.

Studies clearly showed that AOs needed training in all 11 competencies of use audio visual aids.

**Keywords:** *Audio Visual Aids, Competencies, Agri. Officers*

## 1. Introduction

Pakistan is an agricultural country, and its economy is based on agriculture. In Pakistan agriculture has the mainstay of the economy as it provides employment to 45% population and provides input for agro-based industry. It accounts for 6.9% of value added in agriculture and 1.4% of GDP (Government of Pakistan, 2010-2011). The Agricultural Officers (AOs) are the development professionals in the field of agriculture in Pakistan. The agricultural extension service is responsible to educate farmers regarding the adoption of latest technologies they have been given the chance to work under a different paradigm i.e. Decentralized Extension which required the role change of AOs from supervision and officers to front line extension worker. Punjab is the main agricultural province of Pakistan where majority of the people live in rural areas spread in 25000 villages with agriculture as main stay of their livelihood. Total area of the Punjab province is 17310 thousand hectares which is about 29% of the total reported, 57% of the total cultivated and about 69% of the total cropped area of Pakistan. Besides, agriculture is the major source of

employment. It accounts for around 42.1% for the labor force as well. Also, it is the largest source of foreign earnings. The major products which earn foreign exchange are cotton, rice, wool, hides, leather goods, and carpets. Moreover 67.5% of the population of our country live in rural areas is directly or indirectly dependent on agriculture. Although agriculture is an integrated system of crops, livestock, fisheries, forestry and range management but the crop sub sector has always been dominated the other sub sectors. It can therefore, be assumed that the scope and importance of agriculture sector can be evaluated by the use of audio visual aids which is of course the need of the day. An effective agricultural extension strategy is therefore; highly imperative for the province is helping to meet rapidly increasing requirements for agricultural production. Modern agriculture requires a balanced and timely use of various inputs and latest information technology for getting good results.

Computer in distance education allowed the learners to proceed through courses at their own place without the expense of time and travel. The learner and trainer can interact with each other as well as by use of computer even though being at a very long distance. The web based training allows the learner to take the course when and where they want (Porter, 1997). Viewed Web as the distance educational tool of the new millennium (O'Niels, 1997). A study was designed in which two internet trainings have been offered to the country extension agents in various states of southeast in USA. They concluded that a majority of extension agents (55%) thought that a training offered through the internet could be as effective as a face to face learning environment (Lipert et al., 2000). The most frequently adopted computer application by extension worker of Virginia Cooperative Extension were e-mail (89.0%); word processing (88.1%) and internet (80.1%) use. Secretaries and 4H agents used e-mail and word processing the most. Excluding the technicians, more than 85% of each extension personnel used the internet. The desktop publishing application was used by only 17% the extension personnel. Agricultural and natural resource agents used presentation software more than any other personnel. They also used spread sheet, financial and data base application considerably more than any group except the secretaries. The predominant computer uses by extension personnel were educational material development and communication. Agriculture agents used computers to respond to clientele requests and keep computerized record more than any other personnel. The researchers suggested that the extension personnel should be proved training in new computer software and technologies (Martin et al., 2001). A

study was conducted to determine the usefulness of the web as an effective learning experience for in-service training. The study also explored whether extension educators would use the Web training site for ongoing support and re-enforcement. During the three in-service training 55 extension educators received training on the Family Resource Management (FRM) site. Sixteen educators (29%) completed the on-line feedback survey. In the next three months, five additional extension educators provided feedback, as did three individuals from the general public. All the respondents already used the Web as a source of information. Daily use was acknowledged by 75% of the respondents. The rest indicated that they used the Web two to three times per week. Every one indicated that their use of Web was 100% business related. All respondents used the Web for e-mail, and 80% indicated that they also used it for both research and education. One-third indicated they used Web to make purchases, and one person used it to make travel reservation. The primary site to access the Web was from respondents' work office (76%) as opposed to the home (8%) or the general officer area (4%) (Musk et al., 2001). They conducted a study to explore and describe perceived academic knowledge, skills and abilities of agricultural and extension education graduate students in cross-national settings to ascertain if the rankings of the variables were consistent by country. Using a Web-based questionnaires, data were collected from 23 countries. The findings showed that the most perceived competency ranking varied by country. The ranking of the five competencies tended to be consistent with respect to the national settings: Applications acknowledge ranked second in four knowledge categories. System skill ranked sixth in seven skill categories; technical skills ranked seventh in seven skill categories; communication abilities ranked first in four ability categories: and at tentativeness and quantitative abilities ranked fourth in four ability categories. Recommendations include increased professional conversations about agricultural and extension educations graduate students competencies in cross-national context and further study (Linder et al., 2003). Lack of training of the organizational staff of the Department of Agriculture (Extension) Government of Punjab, Pakistan was identified (Lodhi, 2003). A study was conducted study to prioritize the training needs of AO (Ext.). They conclude that priority wise professional competencies in which agriculture officer needs training regarding program planning (Khan, 2004). A study was designed to identify the training needs, of Agricultural Extension Administrator in Planning Extension activities, they concluded that Extension Administrator, need

training in all four competencies in Planning Extension activities/process (Hussain et al., 2004). Discrepancy values based on the mean perceptions of AOs were positive values for all 14 technical competencies ranging from lowest value to 0.21 to highest value 0.99. It means AOs needed training in all 14 technical competencies regarding agronomic practices (Khan et al., 2007). A study was conducted to evaluate the effectiveness of farmer field school approach for information dissemination of agricultural technology in Punjab. It was concluded that information provided the extension field staff through different extension methods is also considered averagely effective (Bajwa et al., 2008). Discrepancy values based on the mean perception of Extension Administrators were positive values for all competencies ranging from lowest values 1.32 to the highest value 1.55. It means that EAs needed training in all seven competencies in "Decision Making" (Hussain et al., 2010). Farmer Field School staff used different extension methods under FFS approach. The extension methods like group discussion, lectures and literatures were used to an average extent and ranked as 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> with mean values 3.24, 2.94, and 2.74 respectively. It was concluded that all extension methods except exhibitions and sign boards/slogans were used to slightly above or below an average extent (Bajwa et al., 2010). A study was designed and concluded discrepancy values based on the mean perceptions of AOs were positive values for all 5 competencies ranging from lowest value to 0.86 to highest value 1.51. It means AOs needed training in all 5 competencies in farm machinery (Khan et al., 2011).

The Agriculture Extension System in the Punjab has been identified as very weak and the extension workers designated as Agriculture Officer (AOs) have been labeled as incompetent to tackle with job requirement under the changing circumstances of globalization and trade liberalizations. The information boom and rapidly changing world has created a need for their training and persistent refresher course. There is a dire need to identify the job areas in which AOs are less competent and need trainings. Until and unless these areas are clearly identified their training programs may not be planned efficiently. This study was therefore, planned to identify, analyze and prioritize the competence of AOs in the use of audio visual aids. It is hoped that the finding of this study will help to design effective training program(s) for AOs.

## 2. Objectives:

1. To determine the present levels of competencies possessed by AOs (Ext.) regarding use of audio visual aids for their job performance in Punjab, Pakistan

2. To determine the importance level of competencies possessed by AOs (Ext.) regarding use of audio visual aids for their job performance in Punjab, Pakistan.
3. To develop rank orders of identified competencies possessed by AOs (Ext.).

## 3. Materials and Methods:

The population of this study consisted of 341 agricultural officers (Ext.) in Department of Agriculture (Extension) who were employed at various places in the Punjab who provided all data. The sampling frame was obtained from the office of the Director General Agriculture (Extension and Adaptive Research) Lahore. A sample size of 181 agriculture officers was randomly selected from the population for the study. The sample size was determined by using table for determining sample size for a given population (Fitzgibbon et al., 1987). A questionnaire was developed by the researcher from the synthesis of related literature reviewed; personnel insights of researcher and discussion with knowledgeable and experienced professionals in the discipline of Agricultural Extension Education. The questionnaire was developed keeping in view the jobs requirement of AOs. It was also tested for reliability and validity. The Chronbach's Alpha calculated for use of audio visual aids of 11 competencies statement was 0.87. It was comprised of 11 competencies. Each competency statement requires the respondents to rate the item on two similar 1-5 point Likert scale. One rating was for the possessed level of competency and other for importance level of competency. Data collection was accomplished through the use of mail questionnaire. A questionnaire package containing cover letter and a stamped self-addressed return envelope was mailed to 181 Agriculture Officers, included in the sample. The cover letter explained the purpose and instruction for completing the questionnaire. The letter stated that all responses would be kept confidential, noting that the code appearing on the questionnaire was strictly follow-up purpose. Techniques were used to enhance the response rate (Isaac & Michael, 1995). The overall response rate was 79.5%. The data were analyzed statistically using computer software statistically package for Social Sciences (SPSS) and Microsoft Excel.

## 4. Results and Discussions

Agriculture officers themselves rated the levels of competencies they possessed and the importance level of each competency for their job

performance. The data concerning the possessed and importance levels of competencies regarding use of audio visual aids are presented in Table 1.

**Table1. Rank orders, means, and standard deviations of self-perceived levels of importance of competencies for the job performance of AOs and levels of professional competencies possessed by them regarding use of audio visual aids**

Competency The ability to	Importance Level			Possessed Level		
	R	M	SD	R	M	SD
convey information through television	1	4.06	0.91	5	2.73	1.25
convey information through radio	2	4.06	0.88	3	2.95	1.11
use multimedia projector	3	3.97	0.9	9	2.51	1.12
present information with sound motion pictures	4	3.93	0.98	8	2.56	1.28
present information with slides	5	3.92	0.89	7	2.67	1.21
prepare radio program on agriculture	6	3.89	0.95	6	2.68	1.17
convey information through charts	7	3.89	0.92	1	3.35	1.17
use over head projector	8	3.71	0.93	10	2.47	1.26
use opaque projector	9	3.62	1	11	2.18	1.13
present information with white board	10	3.59	0.96	4	2.8	1.24
present information with chalk board	11	3.53	0.98	2	2.97	1.23
<b>Overall</b>		<b>3.83</b>	<b>0.95</b>		<b>2.72</b>	<b>1.23</b>

R=Rank; M=Mean; SD= Standard Deviation

Agriculture officers rated all (Martin et al., 2001) identified competencies as highly important (mean score 3.53 to 4.06) for their job performance. Out of 11 competencies the top three (most important competencies) for the job performance of AOs as perceived by themselves were: (1) the ability to convey information through television (mean=4.06); (2) the ability to convey information through radio (mean=4.06); and (3) the ability to use multimedia projector (mean=3.97). The competencies which received lowest rank order on importance scale included: (1) the ability to present information with chalk board (mean=3.53); (2) the ability to present information with white board (mean=3.59); and (3) the ability to use opaque projector (mean=3.62). The overall mean of all seven competencies in the main area “Use of Audio Visual

Aids ” as important scale was 3.83. The competencies within the main area “Use of Audio Visual Aids” which were possessed by AOs at the highest level were: (1) the ability to convey information through charts (mean=3.35); (2) the ability to present information with chalk board (mean=2.97); and (3) the ability to convey information through radio (mean=2.95). Similarly on the same scale competencies which were perceived to be possessed by AOs at lowest level in this area were: (1) the ability to use opaque projector (mean=2.18); (2) the ability to use overhead projector (mean=2.47); and (3) the ability to use multimedia projector (mean=2.51).

The discrepancy values (DVs) on the basis of differences between the importance levels of competencies for the job performance of AOs and the possessed levels of competencies by AOs were

calculated. These differences were considered as the felt levels of training needs in the identified

competencies. The data concerning these aspects are presented in Table 2.

**Table 2. Rank orders of the training needs of agriculture officers based on the differences between importance and possessed levels of competencies in “Use of Audio Visual Aids”**

Competency The ability to.....	Importance Level (IL) Mean	Possessed Level (PL) Mean	Difference Dv=IL- PL= Training Need	R
use multimedia projector	3.97	2.51	1.46	1
use opaque projector	3.62	2.18	1.44	2
present information with sound motion pictures	3.93	2.56	1.37	3
convey information through television	4.06	2.73	1.33	4
present information with slides	3.92	2.67	1.25	5
use overhead projector	3.71	2.47	1.24	6
prepare radio program on agriculture	3.89	2.68	1.21	7
convey information through radio	4.06	2.95	1.11	8
present information with white board	3.59	2.80	0.79	9
present information with chalk board	3.53	2.97	0.56	10
convey information through charts	3.89	3.35	0.54	11

DV= means discrepancy value between importance and possessed levels of competencies; DV=IL-IP  
IL=Importance level; PL= Possessed level; R=Rank

Discrepancy values (DVs) between the importance levels of professional competencies for the job performance of agriculture officers and the levels of these professional competencies possessed by them in the “Use of Audio Visual Aids” were considered as felt training needs in these professional competencies. Out of 11 training needs of AOs the top three (most important) were: (1) the ability to use multimedia projector (DV=1.46); (2) the ability to use opaque projector (DV=1.44); and (3) the ability to present information with sound motion pictures (DV=1.37). The training needs which received lowest importance level included: (1) the ability to convey information through charts (DV=0.54); (2) the ability to present information with chalk board (DV=0.56); and (3) the ability to present information with white board (DV=0.79). The discrepancy values based on the mean perceptions of AOs were positive values for all professional competencies ranging from lowest value 0.54 to highest value 1.46. It means that AOs needed training in all 11 competencies in “Use of Audio Visual Aids” identified in Table 2. The critical training needs (DV≥0.75) in this area were identified as: (1) the ability to use multimedia projector (DV=1.46); (2) the ability to use opaque projector (DV=1.44); (3) the ability to present information with sound motion pictures (DV=1.37); (4) the ability to convey information through

television (DV=1.33); (5) the ability to present information with slides (DV=1.25); (6) the ability to use overhead projector (DV=1.24); (7) the ability to prepare radio program on agriculture (DV=1.21); (8) the ability to convey information through radio (DV=1.11); and (9) the ability to present information with white board (DV=0.79).

### 5. Conclusion and recommendations:

The findings from the data presented in table 2 indicate the training needs of AOs in identified competency statements regarding use of audio visual aids. The Discrepancy Values based on the mean perceptions of Agriculture Extension Agents were positive values for all 11 competencies ranging from lowest values 0.54 to highest value 1.46. It means that AOs needed training in all 11 competencies of use of audio visual aids identified in table 2.

### References

[1] Bajwa, M.S., M Ahmad, T. Ali and M. Z. Iqbal. Effectiveness of Farmer Field School approach for information and dissemination of agricultural technology in Punjab. J. Agric. Res. 46(3) 291-297. 2008  
[2] Bajwa, M.S., M Ahmad, and T. Ali. An Analysis of Effectiveness of Extension

- Methods used in Farmer Field School approach for information and dissemination of agricultural technology in Punjab. *J. Agric. Res.* 48(2) 259-265. 2010
- [3] Fitzgibbon, Taylor, C. & Morris, L. L.. How to design a program evaluation. Newbury Park CA: Sage. 1987
- [4] Government of Pakistan. Economic survey: Economic Advisor's Wing, Finance Division Islamabad. 2010-2011
- [5] Isaac, S., & Michael, W. B. Handbook in research and evaluation, San Diego: Educational and Industrial testing Service. 1995
- [6] Khan, M.A.J., Tanvir A., Nisar H. & Ghazanfer, A.K. Prioritizing the training needs of agriculture officers in extension program planning in the Punjab, Pakistan. *Indus journal of plant Sciences* 3(1):66-68. 2004
- [7] Khan, M.A.J., Toheed, E.L., Ijaz, A. & Ghazanfer, A.K. An Assessment of technical competencies (Agronomic Practices needed by Agriculture Officers in the Punjab, Pakistan. *Pak. J. Agri. Sci.* 44(2):381-384. 2007
- [8] Khan, M.A.J., Toheed, E.L., Muhammad, I, Zafar M & Sania M. Training needs of Agricultural Officers regarding mechanized farming in Punjab, Pakistan. *Sarhad J. Agric.* 27(4): 633-636. 2011
- [9] Lipert, R.M., Plank, O., & Radhakrishna, R. Beyond perception: A pretest and posttest evaluation of a regional Internet extension in-service training. *Journal of Extension* [On-line]. 38(2). Available: <http://joe.org/joe/2000april/a2.html>. 2000
- [10] Linder, J. R., Dooley, K. E. , & Wiengenbach, G. J. A cross-national study of agricultural and extension education components. *Journal of International Agricultural and Extension education*, 1(10). 2003
- [11] Martin, B.L., Stewart, D. , S.L. , & Hillison, J. Computer anxiety levels of Virginia Extension Personnel. *Journal of Extension* [On-line]. 39(1). Available: <http://joe.org/joe/2001february/al.html>. 2001
- [12] Musk, G., Goetting, M. &, Vukonich, M. The world wide web: A training tool for family resource management educators. *Journal of Extension* [On-line]. 39 (4). Available: <http://joe.org/joe/2001august/a3.html>. 2001
- [13] O'Niels, B. Teaching consumers to use Internet to make consumer decision. *Journal of Extension* [On-line]. 37(3). Available: <http://www.joe.org/joe/1999june/iw4.html>. 1999
- [14] Porter, L. R. Creating the virtual classroom: Distance learning with Internet. New York: J. Wiley and Sons. 1997
- [15] Lodhi, T.E Needs of paradigm shift form top-down to participatory extension in the Punjab, Pakistan: Perceptions of farmers, change agents and their supervisory staff. Unpublished doctoral dissertation. Department of Agricultural Extension, University of Agriculture, Faisalabad, Pakistan. 2003
- [16] Lodhi T.E., Muhammad A.J.K, Muhammad A., Ghazanfer A. K. Perceptions of Organizational Staff of Top-Down and Participatory Agriculture Extension System in the Punjab, Pakistan. *International Journal of Agriculture & Biology* 8(4) 569-572. 2006
- [17] Hussain, N., Tanvir A., Muhammad A.J.K. & Munir, A. Training Needs of Agriculture Extension Administrators in Planning Extension Activities in the Punjab, *International Journal of Agriculture & Biology* 6(5)941-942. 2004
- [18] Hussain, N., Muhammad A.J.K. & Muhammad, A. Identification and prioritization of the Training Needs of Agricultural Extension Administrators in efficient decision making processes in the Punjab, Pakistan. *Pak.J.Agri. Sci.* 47(3) 293-295. 2010