

CURRICULUM
OF
AGRICULTURE EXTENSION
B.Sc (Hons)
M.Sc (Hons)

(Revised 2005)



HIGHER EDUCATION COMMISSION
ISLAMABAD

CURRICULUM DIVISION, HEC

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PREFACE

Curriculum of a subject is said to be the throbbing pulse of a nation. By looking at the curriculum one can judge the state of intellectual development and the state of progress of the nation. The world has turned into a global village; new ideas and information are pouring in like a stream. It is, therefore, imperative to update our curricula regularly by introducing the recent developments in the relevant fields of knowledge.

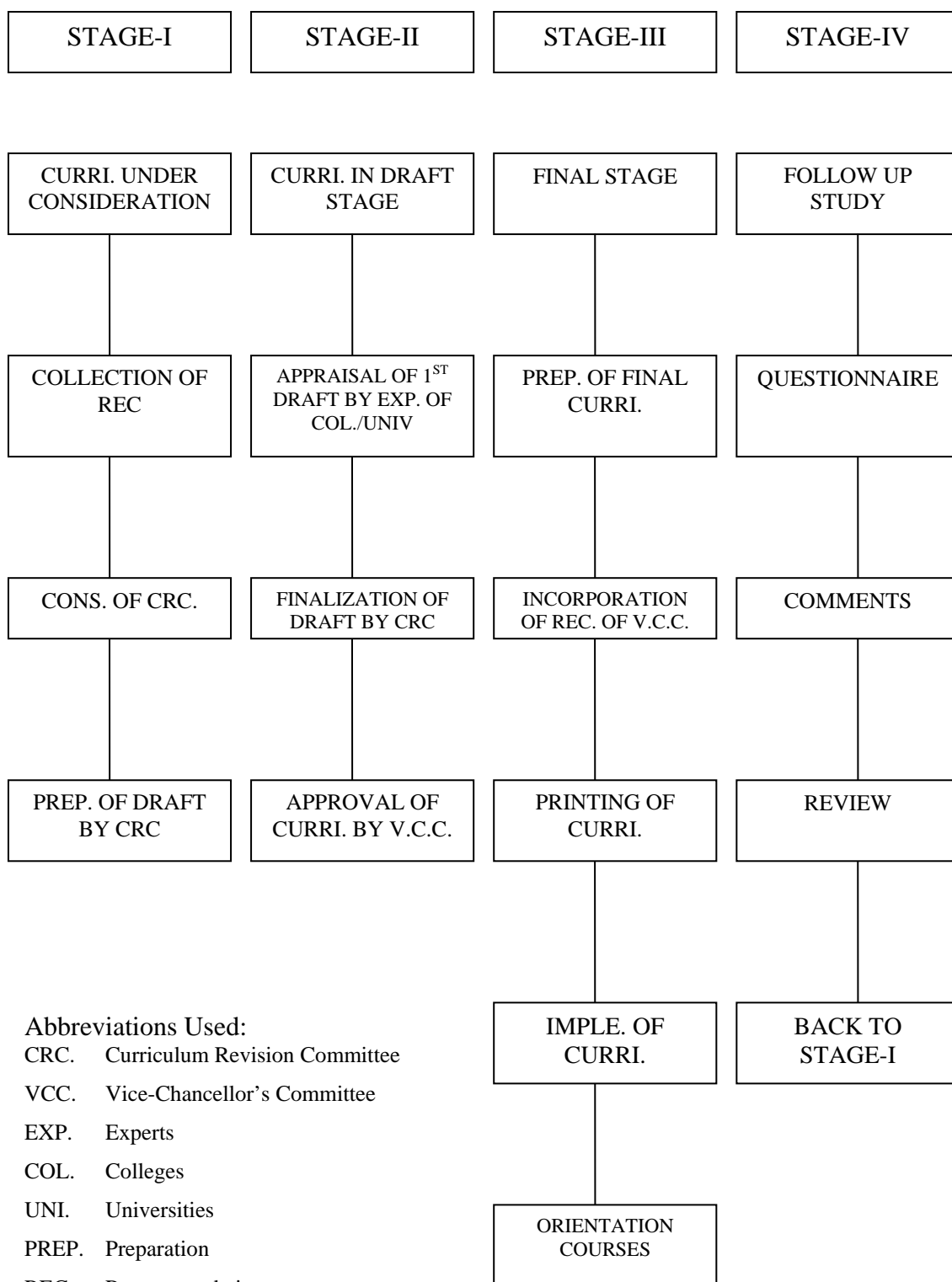
In exercise of the powers conferred by sub-section (1) of section 3 of the Federal Supervision of Curricula Textbooks and Maintenance of Standards of Education Act 1976, the Federal Government vide notification no. D773/76-JEA (Cur.), dated December 4, 1976, appointed University Grants Commission as the competent authority to look after the curriculum revision work beyond class XII at bachelor level and onwards to all degrees, certificates and diplomas awarded by degree colleges, universities and other institutions of higher education.

In pursuance of the above decisions and directives, the Higher Education Commission (HEC) is continually performing curriculum revision in collaboration with universities. According to the decision of the special meeting of Vice-Chancellors' Committee, curriculum of a subject must be reviewed after every 3 years. For the purpose, various committees are constituted at the national level comprising senior teachers nominated by universities. Teachers from local degree colleges and experts from user organizations, where required, are also included in these committees. The National Curriculum Revision Committee for Agriculture Extension in its meeting held in July 21-23, 2005 at the HEC Regional Centre, Lahore revised the curriculum after due consideration of the comments and suggestions received from universities and colleges where the subject under consideration is taught. The final draft prepared by the National Curriculum Revision Committee duly approved by the Competent Authority is being circulated for implementation by architectural institutions.

(PROF. DR. ALTAF ALI G. SHAIKH)
Adviser (Acad/R&D)

July 2005

CURRICULUM DEVELOPMENT



INTRODUCTION

The meeting of National Curriculum Revision Committee (NCRC) was held at Regional Centre, HEC, Lahore from July 25 – 27, 2005 to review, discuss and finalize the curriculum of Agricultural Extension Education. The following experts participated:

1. Dr. Tanvir Ali, Convener
Associate Professor,
Department of Agriculture Extension
University of Agriculture,
Faisalabad
2. Mr. Hayatullah Khan, Member
Assistant Professor,
Faculty of Agriculture, Gomal University,
D.I.Khan
3. Prof. Dr. Muhammad Akram, Member
Chairman,
Department of Agriculture Extension &
Communication,
NWFP Agricultural University,
Peshawar
4. Mr. Shahin Shah Safi, Member
Director Communication (Retd),
House # 335, Street # 10, P-2, Phase-IV,
Hayatabad, Peshawar
5. Prof. Muhammad Nawab Khan, Member
House # 190, Street 8, Sector N-2
Phase-IV, Hayatabad,
Peshawar
6. Prof. Fazal Karim Rajput, Member
Ex-Convener NCRC Agriculture Extension,
House 1055, St. 95, I-10/1
Islamabad
7. Dr. Manzoor Hussain Soomro, Member
Chief Scientific Officer
Pakistan Science Foundation
Constitution Avenue, G-5/2,
Islamabad

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| 8. | Dr. M. Ejaz Sandhu,
Director Research
Superior College, Lahore | Member |
| 9 | Miss Rabia Gul
Dept. of Agril. Sciences
Allama Iqbal Open University,
Islamabad | Member |
| 10. | Dr. Yusuf Ali Ch.,
Dean, University College of Agriculture,
Rawalkot, AJK | Member |
| 11. | Mr. Amjad Ali,
Assistant Professor
Balochistan Agriculture College,
Quetta | Member |
| 12. | Mr. Arshad Ali Ch.,
Assistant Professor, Agri. Extension
Arid Agriculture University,
Rawalpindi | Member |
| 13. | Mr. Muhammad Zafarullah,
Assistant Professor,
Department of Agriculture Extension,
NWFP Agricultural University,
Peshawar | Member |
| 14. | Prof. Dr. Nowshad Khan,
Chairman,
Department of Agriculture Extension,
Allama Iqbal Open University,
Islamabad | Member |
| 15. | Dr. S. S. Bukhari,
Associate Professor,
Department of Agriculture Education
Extension,
Sindh Agriculture University,
Tandojam | Member/Secretary |

The meeting started with recitation from the Holy Quran by Prof. Fazal Karim Rajput. Ch. Bashir Ahmed, Deputy Director, HEC, Regional Centre, Lahore welcomed the participants. Mr. Tahir Ali Shah, Assistant Director (Curriculum), HEC, Islamabad highlighted the importance of curriculum

development process at national level. He appreciated the work done by NCRC in its meeting held on May 30 to June 1, 2005 in revising the draft curriculum. He also briefed the committee members regarding decisions taken by Deans Committee. Mr. Shah further explained the comments received from foreign experts regarding the revision of the curriculum. Prof. F. K. Rajput, Ex-Convener, presented his comments for further improvement of draft. The draft was thoroughly discussed in the light of suggestions received from participating members. The committee visited bookstores to identify and incorporate the latest editions of books.

At this stage, it was realized that a national professional association for the advancement of Agricultural Extension Education is the need of time to help resolve national issues and steer the profession in right direction. The committee approved that the name should be "Pakistan Association for the Advancement of Agricultural Extension Education (PAAEE)".

Dr. Tanvir Ali, University of Agriculture, Faisalabad and Dr. S.S. Bukhari, Sindh Agriculture University, Tandojam continued as Convener & Secretary.

The Committee finalized draft curriculum for Under-graduate and Post-graduate level for Agriculture Extension.

**SCHEME OF STUDIES
FOR UNDERGRADUATE COURSES IN
AGRICULTURE EXTENSION**

	First Semester	
AEE 301	Introduction to Agricultural Extension Education	3(3-0)
	Third Semester	
AEE 401	Effective Communication Skills in Agricultural Extension	3(2-1)
	Fifth Semester	
AEE 501	Extension Programme Development	3(2-1)
AEE 503	History and Philosophy of Agricultural Extension Education	4(4-0)
AEE 505	Rural Development Programmes in Pakistan	4(3-1)
AEE 507	Rural Youth and Women in Agricultural Development	4(3-1)
Sub-Total		15(12-3)
	Sixth Semester	
AEE 502	Agricultural Extension Methods	4(3-1)
AEE 504	Computer Applications in Agricultural Extension	3(1-2)
AEE 506	Psychology of Adult Learning	4(4-0)
AEE 508	Human Resource Management	4(3-1)
Sub-Total		15(11-4)
	Seventh Semester	
AEE 509	Dyadic communication	3(2-1)
AEE 511	Introduction to evaluation and research methods	4(3-1)
AEE 513	Technology Applications in Agricultural Extension Education	4(3-1)
AEE 515	Scientific and Technical Writing	4(1-3)
Sub-Total		15(9-6)
	Eighth Semester	
AEE 516	Internship	15(0-15)

extension meetings. Improving facilitation skills.

Listening --- Reasons of poor listening. Tips for improving listening skills.

Writing --- Art of good writing. Writing for newspapers and magazines. Writing letters reports and articles frequently required for the job of an extension worker.

Reading ---- Reasons of poor reading; Tips for developing effective reading skills.

Extension education methods and audio visual aids.

PRACTICAL

Micro-teaching --- Students will plan and practice extension teaching in small groups. They will maintain a practical notebook regarding preparation of instructional designs.

Interviewing --- Students will interview farmers and extension workers to identify the problems.

Writing Skills --- Students will complete various entries of registers i.e. stock register, store book, etc. and will prepare different type of reports required for the job of extension worker.

BOOKS RECOMMENDED:

1. Calvert, P. (Ed.) 1990. The Communicator's Handbook: Techniques and Technology. Maupin House, Gainesville, U.S.A.
2. Rogers, E. M. and F. F. Shoemaker. (1971). Communication of innovations. A cross-cultural approach. Free Press, New York.
3. Murphy, H. A., Hidelbrandt, H. P. and J. P. Thomas. 2000. Effective Business Communication. International Series. NBF, Islamabad.

AEE 501 Extension Programme Development 3(2-1)

THEORY

Purpose, concept, scope and significance of programme development.. Assumptions, characteristics and principles. Programme development models. Steps in programme development: Situation analysis, needs assessment, statement of objectives, plan of work. Planning, implementing, monitoring and evaluating programmes. Participation of stakeholders in Extension programme development.

PRACTICAL

The students will conduct situation analysis and needs assessment. They will plan extension programmes based on prioritized needs of extension clientele. They are required to submit a written report thereon.

BOOKS RECOMMENDED:

1. Swanson, B. E. et al 1997. Improving Agricultural Extension: A Reference Manual, FAO Rome.
2. Boyle, P. G. 1981. Planning Better Programs. McGraw-Hill Book Company, New York.
3. Beg, M. A. K.; S. M. Anwar and M. Azim.1980. Basic Needs and Rural Development 2 Volumes: Pakistan Academy for Rural Development, Peshawar.
4. Assifi, N.M. and James H. French, Guidelines for Planning Communication Support for Development, UNDP.
5. Khan, A.H. 1986. Rural Development in Pakistan Vanguard Books Ltd. 8-Davis Road, Lahore.
6. Kretzman. J. & McKnight. J. 1993. Building Communities from the Inside out: A path toward finding and mobilizing Community Assets. ACTA Publication Chicago. ILL.
7. Bennett, C. & Rockwell, K. 1994. Targeting Outcomes of Programmes. An Integrated Approach to Planning and Evaluation.

AEE 502 Agricultural Extension Methods

4(3-1)

THEORY

Characteristics of formal, informal and non-formal education. Teaching as a process of facilitating learning, preparing an instructional design for extension teaching. Planning, conducting and making follow up of various extension methods. Individual, group and mass contact methods. Participatory extension methods. Computer application in Agri. Extension (Cyber Extension).

PRACTICAL

Each student will plan an instructional design for a given extension teaching situation. He/She will be involved in micro teaching concerning agricultural extension work.

BOOKS RECOMMENDED:

1. Swanson, B.E. et al 1997. Improving Agricultural Extension; A reference Manual, FAO, Rome.
2. Memon, R.A. and E. Bashir (Ed) 1993, Extension Methods, National Book Foundation, Islamabad.
3. Swanson 1984. Agri. Ext: A Reference Manual, FAO, Rome.
4. Adams M.E. 1982. Agri Extension in Developing Countries, Longman, UK.
5. Kelsey, H.D. & C.C. Hearne. 1963. Cooperative Extension Work, Ithaca, New York.
6. Sharma, S.R. 1998. Extension Education. Omsons Publications, New Delhi, India.

AEE 503 History and Philosophy of Agricultural 4(4-0) Extension Education

THEORY

Historical perspective of Agricultural extension education in Pakistan. The past performance of various extension programmes, systems and models practiced in Pakistan. The emergence of private sector extension in Pakistan. Philosophy, its definition and branches. Philosophical foundation of agricultural extension education. Islamic bases and foundations of agricultural enterprises. Islamic philosophy of extension education. Creating awareness of quality assurance in the global perspective with special reference to WTO in trade liberalization and globalization. Decentralized extension; its strength and weaknesses.

BOOKS RECOMMENDED:

1. Adams, M. E. 1988. Agricultural Extension in Developing Countries, Longman Singapur Publishing Private, Ltd, Singapur.
2. Hussain, M. 1993. Agricultural Extension in Islamic Cultural Millieu, Islamabad: National Science Council.
3. Hussain, M. 1993. Agricultural Extension in Perspective. Lahore: Islamic Education Congress, 7-Friends Colony, Multan Road, Lahore.
4. Agricultural Extension - The Next Step. PRS No.13, World Bank, Washington DC, 1990.

5. Ornstein, A. C. & Levine, D. E. 1994. Foundations of Education, Houghton Mifflin Company.
6. Blackburn, D. J. 1989. Foundations and Changing Practices in Extension. Guelph, Ontario, Canada: University of Guelph.

AEE 504 Computer Applications in Agricultural 3(1-2)
Extension

THEORY

Importance of information systems in Extension Education. Introduction and understanding of computer systems: Computer hardware, Operating systems, application software. Introduction to programming languages. Files and data bases, data communication and networks. Internet basics, E-commerce. MS-Office. MS-Project, Internet Browsers,

PRACTICAL

Students will be given individual assignments. They will work on computers and produce desired output(s).

BOOKS RECOMMENDED:

1. James A. Senn, Information Technology in Business, BPB
2. Peter Norton's Introduction to Computers: Peter Norton; 3rd Edition 1999
3. The ABC's of Micro Soft Office 97 Professional Edition; Guy Hart-Davis; 1st Indian Edition 1997

AEE 505 Rural Development Programmes in 4(3-1)
Pakistan

THEORY

Concept, philosophy, importance and objectives of rural development. Main approaches/programmes of rural development in Pakistan i.e. V-AID, Basic democracies, rural works programme, IRDP, social action programme, participatory rural development projects, community based organizations. Current rural development programmes: rural support programmes and rural development programmes of various NGOs, Farmer Field School (FFS) etc. A critical analysis of govt. plans and policies for rural development. Main features of a suitable strategy for rural development in Pakistan. Future trends of rural development in Pakistan.

PRACTICAL

Each student will be assigned a project related to an important aspect of rural development. After completing the project each student will write and submit a comprehensive report on the given problem.

BOOKS RECOMMENDED:

1. Siddiqui A. Jameel 1980. A review of rural development programme - Pakistan. Deptt. of Agri. Economics, NWFP Agri University, Peshawar.
2. Khan A.H. 1985. Rural Development in Pakistan, Awami Press, Lahore.
3. Chambers R. 1993. Rural Development - Putting the Last First - John Wiley, New York.
4. Baig M.A.K. et al 1986, Int. Conference on Challenge of Rural Development in the Eighties. Pakistan Academy for Rural Development, Pakistan.
5. Burkey, S. 1993. People First: A Guide to Self-reliant Participatory Rural Development. Zed Books Ltd., London.
6. Hasan, I. 1989. Integrated Rural Development. New Delhi, India. Sterling Publishers Private Limited.
7. Katz, E. 1998. Towards Community Owned Extension. I.B.L. Lindau. Switzerland.
8. Narasaiah, M.L. 2003. Approaches to Rural Development. Discovery Publishing House New Delhi (India).

AEE 506 Psychology of Adult Learning

4(4-0)

THEORY

Definition of Psychology, Application of Cognitive Psychology in agricultural extension education. Cognition as domain of learning. Psychomotor and Affective learning. Levels of learning. Active learners vs passive learners. Farmers as adult learners. Implications of physical, mental, emotional and social aspects for cognitive and psychomotor learning. Personality types and their effect on learning and human relationship. Information processing models. Sensory input. Pattern recognition and various theories of pattern recognition. Theories of attention and motivation. Problems of adjustment and understanding human behaviour according to the changed conditions. Need for guidance services in Pakistan. Educating farmers regarding problem solving and decision making. Evaluation of learners achievements.

BOOKS RECOMMENDED:

1. Bee, L.H. 1987, The Journey of Adulthood, New York: Mechmillan Morgan C.T. and A.K.
2. Richard 1980, Introduction to Psychology, McGraw Hill Book Co., New York.
3. Robinson, R.D. 1979, An Introduction to Helping Adults Learn and Change, Omnobook, Wisconsin, U.S.A.
4. Rauf, A. 1980. Dynamic Educational Psychology.
5. Wool folk, A. E. 1999. Educational Psychology. Allyn & Bacon Company, Singapore.
6. Glover, J. A. & R. H. Bruning. 1990. Educational Psychology: Principles and Applications. Harper Collins Publishers.
7. Read, S.K. 1982. Cognition: Theory and Practice. Wadsworth, Inc. Selmont, California, USA.
8. Goldstein H. 1984. Social learning and change – A cognitive approach to human services. Book Mark (Pvt.) Ltd., 5 -Temple Road, Lahore.
9. Solso, R.L. Cognitive Psychology 6 Ed. Pearson India.

AEE 507 Rural Youth and Women in Agricultural 4(3-1) Development

THEORY

Meanings, philosophy, and objectives of rural youth work. Characteristics, needs, and problems of rural youth in Pakistan. Participation of rural youth and women in agricultural development programmes. A review of important youth organizations in Pakistan. Critical analysis of the past and present youth organizations in Pakistan. Guidelines for organizing a youth programme. Selection of projects for the youth clubs, participation of rural schools in dissemination of agricultural information. Role of women in agricultural extension in Pakistan and other selected countries. Socio-cultural constraints in involving women in Agricultural Extension activities in Pakistan.

PRACTICAL

The students will be assigned projects for youth development in the given situation.

BOOKS RECOMMENDED:

1. Adams, M.E. 1988, Agricultural Extension in Developing Countries, Longman Singapur Publishing Private, Ltd, Singapur.
2. Swanson, B.E. 1984. Agricultural Extension: A Reference Manual, F.A.O. Rome.
3. Agricultural Extension - UNDP, New York (1991).
4. Global Consultation on Agricultural Extension, FAO, Dec. 1989, Rome Italy.
5. Government of the Punjab, 1988, Rural Youth.
6. Prawl, W., R. Medlin and J. Gross. 1984. Adult and Continuing Education through the Cooperative Extension Service. Columbia, Missouri. University of Missouri.
10. Waghmare, S. K. 1989. Teaching Extension Education. Metropolitan, New Delhi, India.

AEE 508 Human Resource Management

4(3-1)

THEORY

Concept of Human Resource Management (HRM). Job design and analyses; personnel recruitment; selection; training and development; compensation and performance evaluation. Administration, management, leadership, supervision, authority, role, staffing, communication, conflict, control, motivation, negotiation, consultation and participation. Management theories. Organization Behavior Analyses, Dimensions of human behavior. Behavior style patterns. Process of behavior modification. Group meetings, group behavior. Group conflict and management. Strategic management. Effective leadership styles.

PRACTICAL

The students will be required to analyse their own management style in class situation.

BOOKS RECOMMENDED:

1. Adams, M..E. 1982 Agricultural Extension in Developing countries. Longman. Burnt Mill, Harlow, Essex, UK.
2. Blackburn, D.J. 1989. Foundations and Changing Practices in Extension. University of Guelph Canada.

3. Clarc, R.C. (1977). Basic Concepts and Theories of Administration and Supervision. (3rd ed.) . university of Wisconsin., Madison, Wisconsin.
4. Myers, I.B. (1987) introduction to type. A description of the theory and applications of the Myres – Briggs type indicators. Consulting psychologists press. Palo alto, California.
5. Swanson, B.e. 1984 agricultural Extension: a Reference Manual. F.A.O. Rome, Italy.
6. Dessler G. 2004. Human Resource Management. Prentice-Hall of India, New Delhi.
7. Joshi R. and S. K. Gupta. 2002. Human Resource Management. Kalyani Publishers, New Dehli.
8. Cascio, W. F. 1998. Human Resource Management. McGraw Hill International Edition. NBF, Islamabad.
9. Hellrigel, D. 2004 Organization Behavior 10 Ed. Thomson.
10. Robbins, S.P. 2000 Organization Behavior: Concepts **Controversies**, Applications Don Mills, Ontario, Canada: Pearson Education Canada

AEE 509 Dyadic Communication

3(2-1)

THEORY

Dyadic communication. Its uses in agricultural extension education, Informal face to face communication. Types of interviews: briefing, probing, selection, performance appraisal and discipline, counseling, persuasive, press conference and broadcast. Principles and techniques of conducting interviews. The interview guide and the interview schedule. Types of questions to be asked in interviews. Criteria for phrasing questions and question sequences. Planning, conducting and interpreting various types of interviews.

PRACTICAL

Students will plan and conduct interviews in the class in a simulated situation. They will also conduct interviews of farmers, submit reports and present their reports in the class in the form of a seminar.

BOOKS RECOMMENDED:

1. Borg, W.R. and M.D. gall 1991. Educational Research: an Introduction. Longman, New York.
2. Broadwell, M.M. 1990 Interviewing Skills. The New Supervisor (4th ed.) Addison wesly Publishing Co., Inc, New York.
3. Me Dowell, E.E. 1991 Interviewing Practices for Technical Writers. Baywood Publishing Company, Inc. New York.
4. Stewart, C.J. and W.B. Cash. 1988. Interviewing Principles and practices. W.m.C Brown Publishers, Dubge, Iowa, U.S.A

AEE 511 Introduction to Evaluation and Research Methods

4(3-1)

THEORY

Concept of evaluation and research. Formative, summative and meta-evaluation. Types of research: basic, applied, action. Quantitative and qualitative. Scientific method in extension education research. The research process: development of questionnaire, interview schedule, survey documents (research instrument) for data collection. Reporting evaluation and research.

PRACTICAL

Each student will develop a questionnaire or interview schedule for data collection. He/She will collect data on limited scale, analyze and submit a report regarding his/her evaluation or research topic.

BOOKS RECOMMENDED:

1. Ray, G. L. and S. Mondal. 2004. Research methods in social sciences and Extension Education. Kalyani Publishers, New Dehli.
2. Borg, W.R. and, gall, M. E. 1989 Education research, and introduction Longman INC New York.
3. Howell, D.C. 1987. Statistical Methods for Psychology (2nd ed.) Duxbury Press, Bosron.
4. Swanson. B.E. et. Al. 1997. Improving Agricultural Extension. F.A.O Rome, Italy.
5. O' Leary, Z 2005 Essential Guide to Doing Research, Sage Publications, New Delhi India

AEE 513 Technology Applications in Agricultural Extension Education

4(3-1)

THEORY

Overview of technologies used in extension programs (Teaching Aids like overhead projectors, slide projectors, multimedia projectors, computers and internet), use of databases for agriculture products, computerized weather forecasting and usage, computerized map reading and interpretation, color coding, spectroscopic study. Introduction to remote sensing & geographical information systems (GIS) for Agricultural Extension Education. Role of remote sensing & GIS for agricultural resource management and rural development. Computerized mass media applications in Agricultural Extension Education: teleconferencing, e-conferencing, knowledge portal, e-office,

e-agriculture, e-business etc. Use of mobile communication for agricultural development and business.

PRACTICAL

Student will be given hands-on experience in above mentioned technologies

BOOKS RECOMMENDED:

1. Mather, P M (2004). Computer Processing of Remotely Sensed Images, 3rd Ed. (John Wiley and Sons), ISBN 0-470-84919-3
2. Geographical Information Systems – Principles, Techniques, Applications and Management, Edited by -*Paul A. Longley, Michael Goodchild, David Maguire and David W. Rhind*, Publisher - John Wiley and Sons
3. An Introduction to Geographical Information Systems, By -*Ian Heywood, Sarah Cornelius and Steve Carver*, Publisher - Addison Wesley Longman Limited, New York
4. Campbell, James B. (2002). *Introduction to Remote Sensing*, 3rd Ed., (The Guilford Press) ISBN # 0-7484-0663-8 (pbk).

AEE 515 Scientific and Technical Writing

4(1-3)

THEORY

Importance of writing as means of communication in professional and scientific fields. Differences between scientific and general audience writing. Alternative requirements and formats of synopsis, thesis, technical articles and research papers. Introduction to American Psychological Association (APA) and Council of Biological Editors (CBE) style manuals.

PRACTICAL

Every student will be required to write technical articles/reports on given topics and present in the class. Moreover, they will critically evaluate and edit reports prepared by other students and present it.

BOOKS RECOMMENDED:

1. Hashmi, N., 1989, Style Manual of Technical Writing. Pakistan Economic Analysis Net Work Project. Ministry of Food, Agriculture and Cooperative Govt. of Pakistan, Islamabad.
2. Kate, L.T. 1973, A Manual for Writers of Term Papers, Thesis and

- Dissertations (Fourth Ed), The University of Chicago Press, Chicago and London.
3. APA. 2001. Publication manual of the American Psychological Association (Fifth Edition). APA, USA.
 4. CBE. _____. Scientific style and format: The CBE Manual for authors, editors and publishers. 6th edition. CBE, USA.

AEE 516 Internship

15(0-15)

PRACTICAL

The students will be attached singly or in groups with the field staff of the Department of Agriculture (Extension), nation building departments (NBDs), non-governmental organizations (NGOs), etc. In addition the students will pay study visits to various agricultural research stations and extension projects in the province/country with special reference to the following:

1. Field crop production and protection
2. Farm machinery/workshops (tractors, threshers, etc.)
3. Livestock and poultry management
4. Farm forestry
5. Seed farms etc.
6. Fish farming
7. Fruit and Vegetable production, preservation, processing (packages industry, cold storage, etc) and protection
8. Manures/chemical fertilizers
9. Soil reclamation and conservation (SCARP) projects
10. Water management/Irrigation department
11. Maintenance of official records.
12. Agriculture credit, business and marketing
13. Cooperatives
14. Rural support programmes/NGOs etc.

Every student will write a comprehensive report based on his/her field experiences, according to the following guidelines:

1. Introduction
2. Objectives of apprenticeship training programme
3. Daily activity report
4. Extension activities undertaken during training

5. Future plans for extension work in the area
6. Problems faced by field staff (host institutes/department), farmers and internee
7. Relationship of agricultural extension service with other nation building departments, agencies and stakeholders.
8. Suggestions for improvement of internship programme.
9. Suggestions for the improvement of agricultural extension service.

Books Recommended:

1. Manuals of Agriculture (Extension Services), published by the US AID Washington, D. C., USA.
2. Swanson B. E. et al (1997), Improving agricultural extension methods, A reference Manual, FAO Rome.

SCHEME OF STUDIES FOR POST-GRADUATE COURSES

AEE 601	Application of Extension Methods	3(2-1)
AEE 602	Programme Planning and Practices in Agricultural Extension Education	4(3-1)
AEE 603	Supervised Field Experience	3(0-3)
AEE 604	Monitoring and Evaluation in Agricultural Extension	4(3-1)
AEE 605	Communication Strategies in Agricultural Extension	4(3-1)
AEE 606	Advanced Research Methods	4(3-1)
AEE 607	Current Developments in Agriculture and Technology Transfer	4(3-1)
AEE 608	Human Resource Development	4(3-1)
AEE 609	Community Development and Gender Issues	4(4-0)
AEE 610	International Agricultural Extension Systems	4(4-0)
AEE 611	Adult and Continuing Education	4(4-0)
AEE 612	Extension Administration & Supervision	4(4-0)
AEE 613	Special Problem	1(0-1)
AEE 614	Seminar	1(0-1)

DETAIL OF COURSES FOR POST-GRADUATE STUDIES IN AGRICULTURE EXTENSION

AEE 601 Application of Extension Methods 3(2-1)

THEORY

Extension teaching methods, their merits, demerits, and applicability; Effects of various extension teaching methods at different stages of adoption of farm and home practices; Personal versus impersonal extension teaching methods and their significance; Indirect influence on the adoption of farm innovations. Involving local institutions in extension teaching.

PRACTICAL

Students will plan and apply given extension teaching method(s) in the field like situation.

BOOKS RECOMMENDED:

1. Swanson, B.E. et al 1997. Improving Agricultural Extension; A reference Manual, FAO Rome.
2. Memon, R.A. and E. Bashir (Ed) 1993, Extension Methods, National Book Foundation, Islamabad.
3. Adams M.E. 1982, Agri Extension in Development Countries, Longman, UK.
4. Kelsey, H.D. & C.C. Hearne. 1963. Cooperative Extension Work, Ithaca New York.
5. Sharma, S.R. 1998 Extension Education. Omsons Publications, New Delhi, India.
6. Waghmare, S.K. 1989. Teaching Extension Education. Metropolitan, New Delhi, India.
7. Ameer, C. 1994. Agricultural Extension: Agricultural Extension: A Step Beyond the Next Step. World Bank, Washington, D.C. USA.

AEE 602 Programme Planning and Practices in 4(3-1)
Agricultural Extension Education

THEORY

Planning for social change; Planned versus un-planned change; Democratic versus autocratic programme planning; Planning Extension Education Programmes. Involving grass-roots in the planning process. Role of change agents (Extension workers) in programme planning. Identifying the gaps between planning theories and practices.

PRACTICAL

The students will be given assignments to plan an agricultural extension education programme for a typical Pakistani village farming Community.

BOOKS RECOMMENDED:

1. Dahama, O.P. 1973. Programme Planning and Administration in Extension, Published by Ram Prasad and Sons. India.
2. Dahama, O.P. 1982. Extension and Rural Welfare. (Latest Edition), Ram Prasad & Sons India.
3. Swanson, B.E.1984. Agricultural Extension: A Reference Manual. 2nd Ed. Food and Agricultural Organization of the United Nations Rome.
4. Swanson, B.E. et al 1997. Improving Agricultural Extension; A Reference Manual, FAO Rome.
5. Kretzman. J. & McKnight. J. 1993. Building Communities from the Inside out. A path toward finding and mobilizing Community Assets. ACTA Publication Chicago. ILL.
6. Bennett, C. & Rockwell, K. 1994. Targeting Outcomes of Programmes. An Integrated Approach to Planning and Evaluation.

AEE 603 Supervised Field Experience**3(0-3)****PRACTICAL**

The students will be attached with experienced extension/development workers to learn on-the-job skills and gain experience in practical settings (e.g. Dept of Agriculture, ToFs, FFSS, CBOs/NGOs, RSPs etc). Each student will observe/participate and report the activities carried out during two weeks period. He/She will be required to make a presentation in the class.

BOOKS RECOMMENDED:

1. Lindberg, K., Wood, M. and Engeldirum, D. 1999. Ecotourism- A guide for planners and Managers, Vol.-2. Natraj Publishers, New Delhi, India
2. Swanson, Barton E, Ed. Agricultural Extension, A Reference 1Manual 2nd Ed. 262 P. 1986. Pap 19.75 (ISBN 92-101504-X, F 2673, F.A.O. Unipub.
3. Dahama, O.P., Programme Planning and Administration in Extension, 1973, Published by Ram Prasad, 58 P.4.00 India.
4. Wilson: Field Instruction-Techniques for Supervisors.1981.

**AEE 604 Monitoring and Evaluation in
Agricultural Extension****4(3-1)****THEORY**

Terminology used in Monitoring and Evaluation; Concept and objectives of evaluation, Stages and types of evaluation, Formative evaluation. Summative evaluations and Meta evaluation, Participatory Monitoring & Evaluation (PME), Determining the type and the sources of data to be collected for an evaluation study. Data collection instruments, interview techniques. Testing reliability and validity of the instruments. Practical problems in data collection, data analysis and interpretation. Writing monitoring and evaluation report.

PRACTICAL

The students will be required to review critically the evaluation reports of development/research projects. They have to identify strengths and weaknesses of the report(s). Each student will select an extension programme/project/activity for evaluation. He/She will plan and conduct evaluation and submit the report to the concerned teacher.

BOOKS RECOMMENDED:

1. Alkin, M.C. (1985), [A Guide for Evaluation Decision Makers](#), Sage Publications Ltd, Beverly Hills, California.
2. Brinkerhoff, R.O., Brethower, D.M., Hluchyj, T., Nowakowski, J.R., (1983), [Programme Evaluation](#), Sourcebook, Kluwer-Nijhoff Publishing.
3. Cernea, M.M and B.J. Tepping. 1977. A System for Monitoring and Evaluation of Agricultural Extension Projects. The World Bank, Washington, D.C
4. Gittinger, J. P. 1982. Economic analysis of agricultural projects. The John Hopkins University Press, Baltimore, Maryland.
5. Chelimsky, Eleanor, [Programme Evaluation: Patterns and Directions](#), American Society for Public Administration, Washington, 1985.
6. Guba, E.G. and Lincoln, Y.S., (1990), [Fourth Generation Evaluation](#), Sage Publications Ltd, Beverly Hills, California.
7. IRRI 1990 Performance Objectives Manual. Los Bonos, Laguna, Philippines.
8. Marshall, C., Rossman, G.B (1989), [Designing Qualitative Research](#), Sage Publications Ltd, Beverly Hills, California.
9. Patton, M.Q. (1980), [Qualitative Evaluation Methods](#), Sage Publications Ltd, Beverly Hills, California.
10. Patton, M.Q. (1982), [Practical Evaluation](#), Sage Publications Ltd., Beverly Hills, California.
11. Patton, M.Q. (1986) [Utilization-Focused Evaluation](#), Sage Publications Ltd, Beverly Hills, California.
12. Rossi, P.H., Freeman, H.E. (1985), [Evaluation, a Systematic Approach](#), Sage Publications Ltd., Beverly Hills, California.
13. Rutman, L. (1984), [Evaluation Research Methods: A Basic Guide](#), Sage Publications Ltd, Beverly Hills, California.
14. Rutman, L. (1980), [Planning Useful Evaluations, Evaluability Assessment](#), Sage Publications Ltd., Beverly Hills, California.
15. Scriven, M. (1991), [Evaluation Thesaurus](#), 4th edition, Sage Publications Ltd, Beverly Hills, California.
16. Smith, N.L. (1985), [Some Characteristics of Moral Problems in Evaluation Practice](#), *Evaluation and Program Planning*, 8(1), 5.11.
17. Swanson, B.E. et.al. 1997 Improving Agricultural Extension. F.A.Q. Rome, Italy
18. Worthen, B.R and J.R. Sanders. 1987. Educational Evaluation. Logman Inc. New York.

THEORY

Defining communication process. Models of Communication. Variables in communication process. Source variables: Credibility, Receiver variables, demographic analysis, personality analysis, interpersonal trust, listening ability and feed-back. Verbal message variables. The components of a persuasive message, factors affecting persuasive message, structuring a persuasive message. Non-verbal message variables and difficulties in their understanding. Non-verbal communication, functions of non-verbal communication, non-verbal communication a global approach. Obstacles to effective communication. Horizontal and vertical communication. The structures of communication process; face to face communication, small group communication, public address communication, mass communication.

PRACTICAL

Visits to various communication Media Centres and holding discussions.

BOOKS RECOMMENDED:

1. Berlo, D.K., 1961, Process of Communication an Introduction to Theory and Practice, Holt Rinerhart and Winston, Inc., New York.
2. Hiebert, R.E. Donald, F.U. Thomas, W.B., 1985, Mass Media IV-An Introduction to Modern Communication. Longman Inc., 1560, Broadway, New York, U.S.A.
3. Joseph A.D. Communication Concepts and Processes, 3rd Ed. (Illus) 32 OP 1981. Pap. Text. Ed.18.95 (IBSNO-13-153411-4) P.H.
4. Wilkinson, L. 1982, Communicating in the class room. (Language, thought & Culture), 36.00 (ISBN 0-12-752060-0) Acad.
5. Williams, B. Communicating Effectively 1980, New Delhi Sterling 15:00.
6. Sandhu, A.S. 1993. Textbook on Agricultural Communication: Process and Methods. Oxford & IBH Publishing Co., Pvt. Ltd. New Delhi.
7. Chaturvedi, P. D. and Chaturvedi, M. 2004 Business Communication: Concept, Cases and Applications Pearson New Delhi, India.
8. Angell, P. 2004. Business Communication Design. Mcgraw Hill Book Company, Inc London

THEORY

Ethical principles and constraints for planning, conducting, and reporting research in Agricultural extension. Selecting and defining a research problem. Conducting review of literature and computer search. Delimiting the research problem. Deciding about research design. Defining population and selecting samples. Choosing alternative methods for data collection. Determining reliability and validity of the research instrument. Selecting and applying appropriate statistical techniques for data analysis. Planning, developing, and critically analyzing research proposals.

Qualitative research design. Purposeful sampling techniques such as deviant case sampling, intensity sampling etc. Methods of qualitative research. Taking field notes for observations and interviews. Strategies for analyzing, interpreting, synthesizing, and reporting qualitative data.

BOOKS RECOMMENDED:

1. Borg, W.R. and Gall, M.D. 1989. Educational Research: An Introduction Longman Inc., New York.
2. Patton, M.Q. 1990. Qualitative evaluation and Research Methods (2nd ed.)sage publications, Inc., London.
3. Wilson, K. and morren Jr., G.E.B. 1990. Systems approaches for improvement in Agriculture and resource management. Macmillan publishing Co., New York.
4. Ray, G. L. and S. Mondal. 2004. Research methods in social sciences and Extension Education. Kalyani Publishers, New Delhi.
5. Misra, R. C. 2005. Educational Research. APH, New Delhi, India.
6. Ray, G.L. and Mondal, 2004 Research Methods in Social Sciences and Extension Education (2nd Revised Ed.) Kalyani Publishers, New Delhi, India.
7. Babbie, E. 2004. The Practice of Social Research. Thomson Brooks.
8. O' Leary, Z 2005 Essential Guide to Doing Research, Sage Publications, New Delhi India.

AEE 607 Current Developments in Agriculture 4(3-1) and Technology Transfer

THEORY

Definition and importance of technology transfer. Characteristics of promising agricultural technology. Barriers to technology transfer. Business considerations of a farm enterprise, and its technological aspects. Farm safety measures. Preparing feasibility reports of alternative farm enterprises. Recent technological developments in agriculture. Characteristics of technology generation, transfer and utilization sub-systems in Pakistan with special reference to agricultural development.

PRACTICAL

Students will be required to undergo practical training aspects of various technologies learnt in theory classes.

BOOKS RECOMMENDED:

1. F.A.O. 1995. The Group Enterprise Resource Book. F.A.O. Rome, Italy
2. Lionberger, H.F. and P.H. Gwin. 1991. Technology Transfer: From Researchers to Users. University of Missouri, USA.
3. Wilson, K. and G.E.B. Morren, Jr. 1990. Systems Approaches for Improvement in Agriculture and Resource Management.
4. Chaudhary K.M., T.M. Khan and M.S.Z. Toor.(Eds) 1986. Proceedings of National Workshop on Research Extension Linkages for Effective Technology Transfer, PARC, Islamabad.
5. Rogers, E.M. 1995. Diffusion of Innovations. The Free Press. New York.
6. Arnon, I. 1989. Agricultural Research and Technology Transfer. Elsevier Science Publishing Co., New York, USA.

AEE 608 Human Resource Development**4(3-1)****THEORY**

Concept of Human Resource Development (HRD). Purpose of training; types of training. Determining training needs; Organizing, supervising and managing training programmes; Human relations training; identifying requirements. Training of Trainers; The Instructor and his/her job; Evaluating the training programmes.

Performance appraisal, job satisfaction, career planning, conflict management and resolution.

PRACTICAL

Student will plan a training programme for a given situation.

BOOKS RECOMMENDED:

1. Dahama, O.P., Extension and Rural Welfare, 1982, Latest Ed. Ram Prasad & Sons, India.
2. P.Y.O., 1979. Training for Agriculture and Rural Development. Food and Agriculture Organization of the United Nations, Rome.
3. Training for Agricultural and Rural Development 1983, (Economics and Social Development Ser.,:No.31) 121p.1985 Pap.16.25 (ISBN 92-5-101500-7,F 2679 5071, FAO).

AEE 609 Community Development and Gender Issues 4(4-0)**THEORY**

Community development, definition and concept; Basic elements of community development; National community development programmes, synthesis thereof: Types of national programmes of community development. Essential elements in building a national programme of community development: Rural development through extension education. Methods of community development. Training of local leaders and personnel for community development; Monitoring and evaluation of community development programmes. Socio-cultural constraints and obstacles to gender mainstreaming in Agri. Extension.

RECOMMENDATIONS

After thorough discussion, the participants of the National Curriculum Revision Committee of Agricultural Extension formulated the following recommendations:

The Higher Education Commission may:

- ensure availability of 10-20 copies of each recommended book to departmental libraries of all the participating universities and colleges in the country.
- specify funds for purchasing required teaching equipments and provide conveyance facilities for trips/visits/ tours to the field.
- provide in-service training to teachers in remote sensing, GIS and other emerging technologies related to Agricultural Extension Education.
- provide funds for conducting a national conference of various stakeholders related to Agricultural Extension as the NCRC realized the importance of Agricultural Extension for boosting the agricultural production in the country.
- provide funds for promoting the activities of Pakistan Association for the Advancement of Agricultural Extension Education (PAAEE).
- sponsor to publish books in the field of Agricultural Extension from the subject specialists/experts.
- provide funds for the establishment of Media Centre in the Department of Agricultural Extension in all agricultural universities/institutes. This may also include FM radio station.
- encourage female participation in all Agricultural Extension Education activities.