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Pakistan Journal of Distance Education is dedicated to the distance learning systems rapidly growing in Asia and the world over. The Journal welcomes studies, research and review papers dealing with past, present and future perspectives of distance education, with a view to awakening further interest in the newly growing discipline and opening new vistas of research.

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PAKISTAN JOURNAL OF DISTANCE EDUCATION

Objectives

1. To provide a forum for discussing policies and perspectives on distance education in Asia and the Pacific Region.

2. To assess achievements made in distance education in the region and in the world.

3. To present research on problems and issues of distance education.

4. To develop close coordination with distance education institutions and strengthen regional and international ties with associations of distance educators.

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EDITORIAL
DISTANCE EDUCATION: HOW MUCH CONVENTIONAL?

Distance education, not only by correspondence but also by means of multimedia, is spreading above all in the Third World nations of Asia, Africa, and Latin America. More appropriately it is widening the conventional education system, keeping its content and structure but liberating it from the physical para-meters of the co-presence of students and teachers and the class room. The clearly defined variables and boundaries are still not distinctly separated from the conventional system.

The task before this fast-emerging discipline is not to replace the traditional or conventional system but to reform rigidly dogmatic attitudes by introducing the notion that there are viable alternatives. Incidentally, these alternatives hold to the values of the conventional system as steadfastly as the conventional system holds to them. However, the high cost, the over-crowding, lack of individual attention and overall lack of provision for formally getting education necessitates the development of distance-teaching as a complementary system to the conventional one.

The students who qualify through distance learning though, are likely to be regarded as "second class citizens." So much so that some parents become so mistrustful that they keep their children from it, even though the alternative is for the children to be herded into the totally inadequate classroom conditions produced by the population explosion.

There has been a dramatic growth in the literature of distance education in recent years. The increasing volume of research in this field and the buoyancy of distance teaching institutions are, however, reducing the inequalities of status between the conventional and distance learning systems. However the commonalities between the two have escalated a lively debate for the individuals and the institutions who are more active in distance education. The consensus is in favour of the latter largely on the ground that it would be more pertinent to fill the role by expanding its membership and interest and improving the quality and effectiveness of its activities to channelise the growing burden of conventional systems.

Unfortunately, despite all the potential promise of distance education as against the conventional system, distance education more or less confines itself to offering the same conventional courses as are offered through the formal channels. The course materials which are prepared, designed and edited by course teams are often drawn heavily from the conventional system, sometimes with scarcely any modification towards making them effective as distance learning texts.

As we accept more students with no or minimal formal educational qualifications, this unfortunate tendency becomes increasingly important, as does the need to hold orientation and study skills sessions that can help students to come to terms with the challenge of study at a distance. Some systems also depend to a large extent on compulsory attendance at study centres. The correspondence element is reduced to a minimum and emphasis is placed on regular attendance at study centres or some other kind of face to face discussion with tutors. The emphasis on personal interaction, in all its aspects, is thereby increased rather than diminished in such system and such support services offer no less an individualized provision than the conventional institutions. All this is perhaps part of an attempt to provide parity with on-campus students. External and internal teachings are integrated to an extent. The same staff teach and assess both sets of students who are enrolled in the same courses, take the same examinations and qualify for the same degree and diplomas.

The "off-campus" mode of University Sains Malaysia is an example of a blend of conventional and distance learning systems. The educators perhaps feel safer under the shade of a conventional umbrella and tend to view distance education as a fringe form of formal education. Pakistan Journal, basically a forum for distance learning, has in fact started giving a place to the problems and needs of the educators in the conventional system as from this issue.

Dr. Ahmed Noor Khan,

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THE CHANGING INTERFACE OF THE WESTERN UNIVERSITY

by

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"Life belongs to the living, and he who lives must be prepared for changes."
Goethe

Introduction

As with human beings, so with universities: times change and both must change with them. Most of us are familiar with the traditional role of the university, inherited from the Middle Ages: a consortium or confratenity of scholars, selflessly engaged in the pursuit of knowledge, seeking to extend frontiers in every known and often unknown direction. There is nothing wrong with this model, provided it does not imply isolation and separation within some ivory tower. But today, as never before, the university depends for its existence upon outstanding teaching, significant research, and service to the total (and larger) community outside. All these must not only be relevant to the needs of today's society, but also be perceived to be relevant.

Some weaknesses in today's university

Once upon a time, when populations were small and concern for continuing education restricted to a few, the university could be regarded as the centre of learning, unrelated to the needs of a large community for miles around. Students would travel on foot, sometimes through difficult terrain to get there. Often they would live right on the poverty line so as to complete their course. Built into the system was the firm belief that students learned much from living together, hence the burgeoning halls of residence of today.

Much of this, I suggest, may now be outdated. It is true that personalized learning between tutor and "tutee" is the best way to learn. I sat at the feet of C. S. Lewis for nearly three years, and have never regretted it. I also had travelled miles, and residence was essential in those pre-war days. But today, could not almost exactly the same results be achieved without travel?

Suggestions for change

Background reading can be available through local libraries. Xeroxed copies of journal articles can be used if appropriate permission is obtained. Essays can be sent through the mail to selected tutors who, after marking them, can in turn send them back through the mail. In case of difficulty the student can always telephone the tutor and ask for elucidation. If need be, selective meetings of groups of students taking the same course can always be arranged with the tutor. This, in fact, has been standard practice for a long time at the Open University in Britain and the International Correspondence School (based in Montreal in the case of Canada). The Open Learning Institute in British Columbia has developed certain techniques, using learning packages of material which include typed notes, audio-casettes, video casettes. Television lecture programmes are offered, out of prime time. A toll-free telephone system enables difficulties of understanding to be overcome. Laboratory sessions can be arranged by students using the facilities of local industries. Discussion can be conducted by means of the electronic blackboard and poly-telephone systems.*

The myth of students learning together

I am of the opinion that the advantages of students meeting together, living together, arguing together, are far less great than once they were, when universities were often isolated "light-houses" in a large area of inadequate provision of post-secondary education. Today, with populations "exploding" in growing cities, we have municipal libraries, school libraries, television in every home, and more recently still, video-text and Telodon programmes. One can study in one's own back-kitchen, often far better than in a crowded university library.

Other student gains through distance education

The adult student can pace himself much better under an open, distance-learning system. Projects can be tailored to suit individual ability and individual allowance of time made available for study. Spreading the cost over a number of years may also be preferable to the man or woman just beginning to earn, or earning just enough to keep a family.

"Split-level" courses within and without the university

For some careers, cooperative work-study programmes may be much more beneficial than the traditional three or four-year academic "grind"

*Net works of individual telephones especially linked up for tutorial purposes.

within the university campus. Waterloo and Regina universities both have excellent "sandwich" courses of this type today. So have Brunel and Bath Universities in Britain. To have direct contact with manufacturing industry is a new experience outside the normal world of academic privilege and isolation. Bridges between universities and industries must be built.

Open access

One other advantage distance education has. It makes access much more possible. Everybody, in fact, has the chance to go for a university education. Many will fail, some probably as soon as they tackle their first few correspondence courses. But at least they have the satisfaction of knowing they had the opportunity to succeed. How many people I have met over a lifetime who have said, "I couldn't go to university at 18 or 19 because....". Now, at 28, 38, or 48 even up to 78, they have the chance to "go for it." I once had a 72-year old retired janitor in one of my classes; and how he loved it! He had status! One of the best things we ever did in our own little island university here was to offer courses to 65-year olds and over, free of any tuition fee. How they enjoyed it! (And we learnt much from them, as did their fellow-students in class).

Some will raise the question of what constitutes an entry-mark to a university for the adult student. The experience of the Open University in Britain has conveniently shown that school-standing on its own is no valid criterion to subsequent performance in a university. After a year or two, it seems, variance in entry qualifications becomes far less distinguishable in some areas (although not in mathematics).

Service to the community

As already mentioned, this once counted for little with universities. I suggest that tomorrow it may ultimately count for everything. University research has to demonstrate its worth-whileness, if the public are to continue to contribute their taxes for the upkeep of universities. An excellent case in point is the University of Saskatoon (Canada), so highly respected in Saskatchewan for the high quality of its research. Producing a rust-free strain of wheat in the laboratory has demonstrably ensured a future for many a farmer in this so-called "bread-basket of Canda" and demonstrated at the same time, the relevance of this university to its community.

A more general example of the kind of research universities should be doing and be perceived to be doing is that reported by the University of

British Columbia in the U.S. Magazine Science (22 March, 1985). It states that a metal found in trace amounts in several foods has a surprising ability to control diabetes. Diabetes affects some 2% to 5% of Canadians. The research is still ongoing, but its societal relevance is obvious.

Other possible research

What other forms might research take? Well, what about giving all adults who care a better grasp of contemporary problems, young and middle-aged alike? Cannot a university explore opportunities to help them acquire leisure-skills, promote good health in all its aspects, provide increased meaning for life, and, not least in our case in Canada, an understanding of the diversity of customs and cultures at local, regional, national and international levels?

Another vast, untapped adult audience awaiting "future" or continuing education is that of the illiterate. In Britain, programmes first put on television for illiterate adults out of prime time soon proved to be drawing very high audiences. What a challenge for our university faculties of education lies here: to train educators to teach the illiterate population. We can learn much from universities in other countries in this regard: Cuba, or Nicaragua for example in the American hemisphere. In Nepal, I understand, completion of a whole year of community service is essential for graduating students. Adult students seeking university entrance might well be allowed to count significant experience in volunteer community work as an entry qualification.

Lastly in this area, perhaps university staff can more demonstrably prove their value by services performed to the community in the interests of "a common kind of humanity by which we are all bound, one to another." Leadership roles in the local voluntary organizations are cases in point.

Conclusion

If the University of the South Pacific can put out courses covering an area greater than all Canada, why cannot more of our own universities, particularly those specializing in specific fields for adult students? The Faure Report of 1972 put it in another way:

> It would seem an extraordinary anomaly that in an age when.... human beings, biologically speaking, reach maturity earlier,

> students are left marking time until the age of 25 and more, in a kind of waiting room where they are held at a remove from real life, productivity activity, decision-making and responsibility.

In short, should we not be sending more of our students directly into the work-force from school, and catering in our universities for those later seeking entry knowing what they want of life in areas both vocational and social, continuing subsequently through to retirement and beyond? This does not preclude more traditional roles for the university. Doctors, lawyers, teachers, dentists, accountants, etc., all have to be trained. The professional in any field has to have an academic grounding as well as specific professional expertise, plus orientation to community service. But even here, in-service education for professional people is likely to become more and more important in the future, as opposed to present demands from some professional organizations for a longer pre-service learning period. (Proposals from two teacher-unions in Britain for an eight-year period of preliminary training plus later in-service training fall into this class).

One other area of change would be in the subjects offered by the university. Some traditional disciplines such as Classics may have to be abandoned if no schools in the university catchment area are teaching Greek or Latin. Some universities retaining a small music department (with few students and a high percentage of specialist staff) may have to lose it in the future, perhaps being replaced by a local specialist institution or conservatory. Conversely, subjects holding promise of future expansion and needfulness (e.g., computer science) may have to start with "favoured treatment" status in regard to staff. It is a sobering thought that the average Japanese secondary school student takes annually far more technology courses than his/her U.S. or Canadian counterpart.

The university model of the Middle Ages then has gone for good. There may still be a place for curiosity-oriented research, for study of the eternal verities, particularly in large universities. But if the average university today is to have the acceptance of the community it serves (and therefore its funding) it has to be perceived to be relevant to today's societal needs. With the refining influence of sustained disciplining of the mind in all subject areas, and the demonstrable applicability of research to current economic or

societal problems, goes an awareness of new subjects to be identified, new audiences to be sought, and newer methodologies to be employed. For today, as never before,

> "Life goes forward, not backward,
> nor tarries with yesterday."

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LEARNER-CENTRED DISTANCE EDUCATION : A RESEARCH-BASED FRAMEWORK

by

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The emergence of distance education as an alternative and supplement to formal education in recent times is mainly due to a realization on the part of educational thinkers and planners that this form of education has several inbuilt advantages in matters of student access, costs, quality of learning and human resource development. However, it was only after the 1950's that, what is today recognized as the "nascent" discipline of distance education, came into being. We seem to have reached a stage when the concepts, media, practices, experiences and insights gained in different situations with different target groups need to be woven into a coherent theoretical framework and overall technology to make distance education a truly flexible, diverse, worthwhile and effective medium of education.

Characteristics and Models

Distance education is conceived today essentially as an open learning system with some special characteristics. These, according to Keegan (1980), are (a) separation of teacher and learner; (b) influence of an educational organization; (c) use of signal carriers; (d) provision of two way communication; (e) occasional opportunities for didactic and social meetings; and (f) industralized form of education. Components or sub-systems underlying distance education have also been identified. According to Holmberg (1981), these are (a) individual; (b) organization; (c) content and structure; (d) organization and administration; (e) contact programmes; (f) media; and (g) evaluation and revision.

Attempts have also been made to develop models of or for the effective management of distance learning systems. (Kaye and Rumble, 1981; Twining, 1982; Banthiya, 1984). Recently, Gupta (1985) suggested a systems approach management model for distance education. In this model, effective management of distance education is assumed to depend upon the management of subsystems; namely those related to (a) learner; (b) curriculum; (c) learning materials; (d) operational factors; (e) operational sources;

(f) organizational factors; and (g) developmental sources. The author also delineated the sub-components underlying each component and suggested that there was a need to further study each sub-system in detail to strengthen it in the light of research studies so that the benefits from distance education could be optimized. In the present paper, an attempt has been made to analyze the "learner sub-system" in the management model in the light of researches conducted in the field. At the very outset it may be said that, as in any other form of education, the learner should occupy the central place in distance education as well. It can be argued that distance education (or correspondence education, external study, home study, independent study, distance teaching, oral tuition, telemathic study, postal tuition, or whatever one may wish to call it) is more likely to succeed if the individual is made the central focus of our endeavour and we, as distance educators, respond to his or her requirements not just as a learner but as a whole person who needs a variety of forms of support in addition to academic guidance. As appropriately observed by Smith (1982) "..... to have it otherwise is to confuse the means with the ends, to get the priorities wrong or, at best, do right things for wrong reasons". It is therefore important to look at distance education from the learner's angle rather than from the organizational angle as may sometimes become the case.

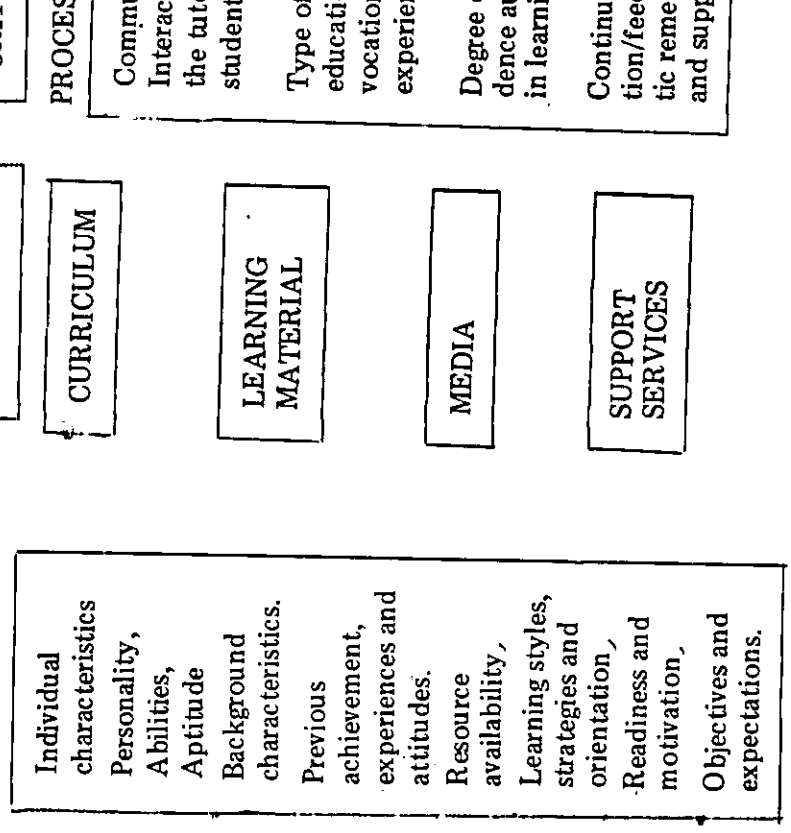
Model of learner—Centred Distance education

It may be seen from the model that the learner has been given a central place while the distance learning system has been fitted to suit his needs, objectives and expectations. This is so because the distance learner happens to be a living dynamic organism who approaches a distance learning organization with the expectation that the particular organization can fulfil his immediate and long term needs in the process of development and actualization. Hence, what type of learner enters the distance learning system is an issue of crucial importance for the success of the whole programme.

The learner in distance education programmes may be in one of these categories: one who had to discontinue his education owing to pecuniary or other circumstances; a resident of geographically remote areas where access to a particular academic programme does not exist; one who had to discontinue his education because of lack of aptitude and motivation but who now feels motivated; one who could not find a seat in a particular institution or does not wish to join a regular college or university department; an inservice person who wants to brighten his career prospects and an individual

DISTANCE EDUCATION: THE LEARNER'S PERSPECTIVE

The system of distance education as it impinges on the learner can be represented by the following model :



Gibbs, Marton and Taylor (1982) explained why students fail to learn through distance education. According to these researchers, this was because (i) students lacked the necessary study skills; (ii) students have limited study approaches; (iii) students themselves choose their approaches to study and some choose inappropriate and ineffective approaches (iv) students can actually develop in their sophistication as learners and some students fail to do so. Marton (1975), Marton and Saljo (1976) and Taylor, Gibbs and Morgan (1980) have found that students learning at a distance relate to their studies in different ways according to their respective orientations. Four main kinds of orientations; (a) vocational; (b) academic; (c) personal; and (d) social have been found to be present. Vocational orientation is of two kinds; qualification and training. Students aiming at gaining qualifications are not primarily interested in the content of the course but rather in passing it; in other words, they are extrinsically motivated. Those intrinsically motivated are interested in the content of the study. Personal orientation has two subcategories — compensation and broadening. Compensation means that the student wants to test his capacity. Broadening stands for student's goals of developing himself. Social orientation is largely intrinsic since the main reason for studying is to have a "good time" (socializing). According to Marton and Svensson (1981), how a student sets about learning is a function of his idea of learning which, in turn, is dependent upon his orientation to studies.

5. Readiness and motivation of the learner have been found to be positively related with success in distance learning situations (Mathiesson, 1971; McIntosh et al, 1977; Coldeway, 1982; Finkel, 1982). Rekkedal found that prior successful completion of correspondence courses is a sure barrier to dropping out. Similarly, it is more difficult for the out-of-touch students to successfully complete a distance learning course as compared to those who are in touch. According to Woodley (1982), students who pass with good grades in a prior course that is recommended or a prerequisite, are less likely to drop out of the subsequent course as they are better motivated.

6. The objectives and expectations of students from a particular institution and or academic programme have also been found to be significant factors relating to success (Morgan, Taylor and Gibbs, 1981). Every learner opts to take admission in a course after having matched his objectives

who looks upon education as a life time activity and may either like to refreshen his knowledge in an existing discipline or acquire knowledge in a new area. All these categories of learner may enter the same distance learning programme. Whether or not they would all complete the course and derive adequate satisfaction from it would depend upon how each of them has been treated through the various services and components of the system. Their success in distance learning situations would also, to a large extent, be dependent upon their entry behaviour and characteristics. It is worthwhile, therefore, to review what type of learner characteristics are related to success in distance learning situations.

What research says on learner characteristics

1. Contrary to the earlier view that adult learning decreases with age (Thorndike, 1928), recent evidence suggests that middle-aged adults are as capable of learning as younger members of a family (Sjogren and Knox, 1965; McIntosh and Wooley, 1978;). As aptly summarized by Holmberg (1982), studies have shown that a distance learner is generally an adult, gainfully employed, with women outnumbering men. The age group 25—35 seems to be the largest one in most distance learning systems while the average age range of a distance learner is 20—45 years. These findings also hold good for the distance learners in developing countries (Ansere, 1978; Anand, 1982).

2. Among the different individual and background characteristics that have been found to contribute positively to success in distance education, mention can be made of psychological factors like intelligence, abilities, level of motivation, reading and comprehension skills, degree of self-confidence and self-direction, previous experience with distance education, aptitude for learning, cognitive and personality style. (Knowels, 1970; Lampikoski and Mantere, 1978; Baath, 1979; Bowlay, 1979; Coldeway, 1982; Finkel, 1982; Woodley, 1982; Rekkedal, 1982; Gomathi, 1984).

3. The time-and-resource availability, season of admission and favourable attitudes to distance education have been found to be positively related to success in distance learning (Glatter and Wedell, 1971; McIntosh, 1976; Freeman, 1976; Goorhuis, 1977; Ansere, 1978; Wanghal, 1979; Flink, 1979; Rekkedal, 1981, Taylor and White, 1982; Verma, 1983).

4. Learning styles, learning strategies and individual learning orienta-

It follows from the above review that distance learning can be made more effective if the entry behaviour of learners is also taken into consideration. In the given model, learner characteristics that need to be considered have been identified as input variables. As Smith (1982) has aptly observed, "..... because learning is a personal, idiosyncratic activity and because quality of learning is important (for distance learners), our wits and resources must continually be channelled into improving both products and processes. In fact, the product (consisting of course materials in different media) must be designed and delivered in such a way that the learning process is as rich and stimulating as it can be for individual students".

Process variables: research evidence

Once the learner with his characteristics, style, abilities and unique background, decides to study at a distance, he has to form linkages with the system itself. These linkages have also been identified in the model. On the one hand, there are admission criteria and entrance tests prescribed by the learning centres. These must be fulfilled before the learner can proceed with his studies. Once he is admitted, his relation with the distance learning centre is through: (1) the curriculum that has been prescribed for the learner; (2) the different types of learning materials that have been prepared to disseminate that curriculum; (3) the different media which are made available to enhance the learner's mastery of the learning materials; (4) the support services which any distance learning centres in the system offer to the learners; and (5) the system of evaluation and examinations which lead to certification (if provided). No one can under-estimate the contribution of each of these subsystems or components towards ensuring success for the learner. The objectives underlying these components, the quality of the components themselves and the modalities through which these are offered to the learner—all play important roles in ensuring success in distance learning. However, the distance learner has no direct control over any of these components. Even though he is paying for his course and for the services offered with it, he is least involved in how these subsystems are managed, since he is mostly on the receiving end. What, however, is important from the point of view of the learner is the actual process whereby he is led to the attainment of the course objectives which are in consonance with his learner's expectations/objectives. Factors which are important in the process of distance learning have been represented in the model as process variables. These are: communication and interaction with the tutor and fellow students; type of learning (educational/vocational/practical) experiences; degree of independence and autonomy in learning; continuous

respectively. On the basis of researches conducted in the field, the following generalizations can be arrived at:

1. The nature and degree of communication and interaction with the organization, tutors and fellow students (socialization) do significantly influence the quality of learning in distance learning situations from the point of view of learners. According to Baath (1980), two-way communication between the learner and the centre/tutor is dependent upon "submission density" *i.e.*, the density of the postal contact brought about by means of assignment submission. According to Rekkedal (1973), Baath and Mansson (1977), Anand (1978) and Sharma and Sharma (1984), the turn around time, *i.e.*, the time elapsing between student's despatch of assignments, marking and return is a key variable in promoting two-way interaction. The shorter the time, the greater the interaction. Kloeden and McDonald (1981) found that the interaction could be enhanced by continuous use of short questionnaires which become more specific as major difficulties are encountered by the students. Valkyser (1980), Durbridge (1981), Bell *et al* (1982) and Bradley (1982) experimented with audio-cassettes in promoting interaction between the teacher and the taught and found it to be much better by using this technique. Harris (1975), Gibbs and Durbridge (1976) and Fritsch (1980; 1981) found that the degree of interaction depended upon a tutor's status, qualifications, attitudes and influence on students. Significant success in promoting two-way communication in distance learning situations through telephone tutoring combined with correspondence education has been reported by Holloway and Hammond (1975), Turok (1977) and Flink (1978). In recent years, Lampikoski and Mantere (1976), Baath and Mansson (1977), Graff (1977), Lambert (1977), Mollers (1981), Wright and Haines (1981), Freeman (1982) and Baath (1982) have reported that the degree of communication in distance learning systems can be greatly enhanced by using computers to analyze student responses and in student counselling.

2. The type of learning (educational, practical and vocational) experiences provided significantly influences the quality of learning from the learner's point of view (Jayagopal, 1981; Vaidya, 1984). A number of studies conducted at the Open University in Britain have shown that the provision of kits, diverse study material, computer access and opportunities for face-to-face contacts can ensure better learner participation and motivation and contribute to higher completion rates in the course (Hawkridge, 1978; Bates, 1984).

3. Success in distance learning programmes has been found to be significantly dependent upon the extent of independence or autonomy in learning accorded to the distance learners (Moore, 1972). The issue as to how much student autonomy should be provided in distance learning situation has, however, been much debated in recent years (Smith, 1982). Whether there should be a tight control or structure or total student centredness (wherein the individual is helped by the tutors to take responsibility for his own learning by determining his skills and choosing his own programmes) and who should be responsible or accountable for the total educational process that the students experience are subjects of controversy still. However, too tight control on the one hand or absolute student autonomy on the other may have to give way to a middle path whereby one does not suffer at the cost of another (Wedemeyer, 1981).

4. Another process variable contributing to success in distance learning from the point of view of the learner is assessment and feedback (Grahm, 1969, Rowntree 1977, Gupta 1978). Through continuous assessment and feedback during the course, it becomes possible to diagnose the difficulties being faced by the learner. Prognostic or remedial measures and guidance can subsequently follow (Gupta, 1981). The evaluation machinery inbuilt in a system of distance education can also determine the nature and scope of guidance and support services to the learners. Suffice it to say that assessment has to be diverse and flexible in accordance with the diversity within the learning population of the distance learning institution. As aptly remarked by Sewart (1978), each student brings his own frame of reference into the learning process and a uniform package of assessment cannot be fitted to one and all. Whether the distance learning system is based on 'pedagogy' or 'androgogy' (Coldeway, 1982), the assessment techniques must take into cognizance the different orientations to learning of the students (Morgan, Taylor, Svensson, 1982). On the basis of current practices, it can be said that too little assessment is as bad as too much; and whatever the mode of evaluation, the results must be given to the learner as soon as possible so that he may perceive it as an important component in the process of his self-development and attaining satisfaction therefrom (Gupta, 1984; Gunasekaran, 1984).

5. The nature and scope of guidance and support services for learners have been found to be important from the point of view of ensuring completion rates in distance education (Hawkridge, 1978). The population of distance learning institutions is characterised by extreme diversity and this calls for different treatment on a variety of levels with reference to student

support and guidance. These may take a form of face-to-face contact sessions, telephone counselling, computer counselling, mobile learning centres, study centres equipped with computer terminals, communication by means of audio-cassettes, tele-conference, postal library, study circles, professional counsellors and computer guidance systems, with each service having some unique advantages (Logan et al, 1970; Lampikoski and Mantere, 1976; Baath and Mansson, 1977; Anand, 1978; Rayman et al, 1978; Flink, 1978; Thornton and Mitchell, 1978; Valkyser, 1980; Lockwood and Cooper, 1980; Dodds, Guiton and Lawrence, 1981; Robinson, 1981; Fritsch, 1982; Smith, 1982; Cochran and Meech, 1982; Meakin, 1982; Kinkirn, 1982; Salter, 1982; Caron, 1982; Bates, 1984). However, the success of these services depends to a large extent upon the involvement of the personnel associated with them and upon the coverage and scope of support (Holmberg, 1981).

Learning outcomes: research evidence

The end-of-course assessment and certification are very important factors for the learner since these represent the outcome of the learning process It is for this reason that this has been shown separately in the given model. With the number of institutions offering different courses through distance education increasing greatly in recent years, the questions of comparability, accreditation, standards and equivalence have assumed importance (Gupta, 1977). There are some students who may not accord much importance to these aspects, but for a majority of learners, the perceived market value of their certificate, degree or diploma in their future growth and professional advancement is of vital importance. Studies of the enrolment trends in Britain's Open University, as also in similar institutions in other countries reveal that the courses offered by conventional universities and or statutory bodies of higher education have higher market credibility even though these courses may not be of a very high standard (Gupta, 1982).

For some, perhaps many learners, the outcomes from a distance learning programme, apart from the certificate, diploma or degree, may be satisfaction and incentive/motivation for further growth and learning. Studies conducted at the UK Open University have revealed that if a particular programme has resulted in satisfactory experiences on the part of the learner, there is every probability that he/she might enrol for a subsequent programme through distance education. This satisfaction is also likely to

be passed on to the other members of the family and the circle of friends and acquaintances so that the number of prospective learners through distance learning techniques may increase. This would imply an increase in clients of those distance learning institutions which have a good reputation among learners.

SUMMING UP

It can be seen, therefore, that the proposed model highlights those variables upon which success in distance learning eventually depends from the point of view of the learner. Howsoever good the curriculum or the learning material or the media or the support services, unless these benefit the learner directly and significantly, the effectiveness of the system cannot be termed as high. It is the conviction of the present writer that distance learning institutions especially in developing countries may have to change their style of functioning drastically from being 'pedagogy based' to being 'androgogy' based. And for this, the learner will have to be made the focal point in distance learning systems. There is nonetheless a great need to initiate more research efforts to study learner aptitude interactions so as to throw more light on learners' characteristics and their learning strategies with a view to matching these with the different institutional inputs and practices for learner satisfaction and success. It is in this context that the model proposed may prove helpful to prospective researchers as much still remains to be done in the direction of making distance education learner-centred.

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DISTANCE EDUCATION: AN INNOVATION IN NON-FORMAL EDUCATION AND THE WORLD OF WORK

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Introduction

The last two decades have witnessed emphasis on the significant need for distance education. The cosmetic societal change, explosion in knowledge and population growth in geometrical proportions have dwarfed the conventional system of education in meeting the aspirations of their peoples in a variety of ways. These conventional strategies unfortunately have their own inbuilt constraints of manpower, finance and physical factors, more often resulting in an inadequate supply of opportunities to its end products.

Despite efforts in the conventional directional educational thinkers and planners both in the North and South have also been looking at unconventional systems which allows them to reach a greater number of people at affordable costs. One such method involves the use of DISTANCE EDUCATION techniques—a successor to the traditional CORRESPONDENCE courses. Worldwide some 10,000,000 students are said to follow post secondary education *via* Distance Teaching Institutions of whom at least 25% are found in the Asia-Pacific region stretching from Pakistan to the South Pacific Islands. Distance education has thus become increasingly recognised as a significant form of education. Both developed and developing countries have seized upon its advantages to meet pressing educational and social needs. Its effects are being felt and revealed, often quite strikingly throughout the world and it has made its way deep into educational, social and economic mainstreams of many societies.

Efforts in this educational strategy are best exemplified by the U.K. Open University, Canada's Open Learning Institute, Athabasca or Australia's Deakin. In the Asia-Pacific context notable institutions of Distance Education are Thailand's Sukhothai, Pakistan's Allama Iqbal and on a modest scale Malaysia's University Sains Malaysia.

It has been further projected that the Asia-Pacific region will experience the fastest growth in this education innovation. On line are at least three more distance teaching Universities in Japan, Indonesia and India (although there are numerous departments of external studies there), Bangladesh, Thailand, Hong Kong, Fiji and Papua-New Guinea.

A case for Distance Education

The demand for education particularly in the third world countries through the formal system has consistently run ahead of resources and the bulk of their population, therefore, remains educationally deprived. The social and economic pressures continue to grow.

Various countries, therefore, have launched various plans to expand their education system to match the world of work, remove illiteracy and make education a life-long continuous process. But the socio-economic and political forces have all along been shifting the educational goals from being achieved. Since commitment to democratization, it is obvious, that the traditional system cannot cope with this ever increasing demand and therefore it has become necessary to find effective alternate channels. A country cannot simply go on opening new universities and setting up new colleges. The cost involvement is too high. The socio-economic and institutional factors rule out such indefinite growth in the number of colleges or universities. Even in the USSR, USA, UK, and Germany, the objective of providing equality of opportunity to all came through the idea of organizing education through correspondence which first originated in the 19th Century.

One notices now new categories of clients seeking education. The young who for one reason or the other are not able to join a college or a University; the adults who want to acquire knowledge and also earn a degree, to become professionally trained to discharge responsibilities for which they were not trained either due to curtailment of their studies or having study courses contrary to their vocation; those who do not want to get uprooted from their environment and do not want disruption in their responsibilities at home or in their employment; those who look for the facility of higher education at their doorstep. Many from these classes may not fit in with our normal admission criteria and thus their aspirations may not be fulfilled through the traditional system of education. The system, therefore, needs a broader access.

Plans to improve the standard of living of all and to narrow inequalities have to look towards a system of education which will achieve the

maximum spread of knowledge and skills to the less privileged and underprivileged sections of society. Viewed in this perspective it is imperative that the universities and colleges become sensitive to the learning needs of the community and respond to the same through relevant learning programmes and tools.

The integration of these programmes under the umbrella of "Distance Education" should provide for effectivity and efficiency. More and more countries, therefore, have turned to distance education which is now recognized as an effective supplement or complement to formal education. It has also come up, in some countries, as an independent parallel alternative system of education. For various considerations, whether they be cost effectiveness, or scale of numbers, or non-availability of or non-accessibility to formal institutions or non-availability of teachers (especially trained ones) distance education as an alternative mode has caught the attention of educational planners. It is seen as an educational system which can fulfil social need and transform elitist education to an egalitarian one.

Concept of Distance Education

The term distance education is fairly new. It denotes the forms of study not led by teachers present in a class-room but supported by tutors and an organisation at a distance from the student. This allows an interpretation which equates distance education with correspondence education. The reason why the term distance education has come into being is that the word correspondence is felt to be associated exclusively with the written word, whereas usually audio recordings and often radio, TV, telephone communication and other media now-a-days supplement the written word in what is here called distance education. Sometimes, particularly in the USA, independent study is used as a synonym.

Correspondence education can be and often is taken to denote this multi-media approach. This is for instance the interpretation of the Association of British Correspondence Colleges. Others reserve the term correspondence education for the types of distance education which are entirely based on printed courses and communication in writing.

A prerequisite for any study of the concept is to define precisely what one means by distance education. Distance Education is a generic term that includes the range of teaching/learning strategies referred to as

"correspondence education or study" at the further education level in the United Kingdom; "home study" at the further education level and "independent study" at the higher education level in the United States. "External studies" at all levels in Australia and "distance teaching" or "teaching at a distance" by the Open University of the United Kingdom. In French it is referred to as tele' enseignement/formation a distance; Fernstudium in German; education a distancia in Spanish; and Teleducacao in Portuguese (Keegan 1980).

Distance education is conceived today essentially as an open learning system with several characteristics : These according to Keegan (1980) are :

- the separation of teacher and learner
- the influence of an educational organization that distinguishes it from private study
- the use of technical media, usually print, to unite teacher and learner
- the provision of two-way communication so that the student may benefit from or initiate dialogue, which distinguishes it from other uses of educational technology
- the teaching of people mainly as individuals and rarely in groups, with the possibility of occasional meetings for both didactic and socialization purposes
- the elements of a more industrialized form of education in which activities like job scheduling, warehousing, postal and media dispatch are characteristic functions.

Institutions of distance education can be classified in four main groups or models which are functioning in one form or the other in most of those centres of distance teaching.

The correspondence school model

The learner depends almost entirely on postal contact with the institution. The correspondence schools send learning materials by post to the student. The student studies the materials and posts assignments back to the institution where they are marked, commented on, and posted back to the student. The student studies the comments, completes the next assignment, and the process is repeated. Most of the developing countries follow this model which involves comparatively low costs.

The multi-media system

The learner has at his disposal a wide range of learning media which include print material, radio and television programmes and face-to-face sessions. In a system similar to that of the Open University of the United Kingdom the link between learning materials and student learning is assured by as coherent a structure as possible. The student is supported by a wide range of activities in an effort to achieve a satisfactory educational experience and prevent avoidable drop-out. Non-broadcast material like cassettes and video cassettes are fast taking the place of broadcast media which have proved much costlier.

The consultation model

The learner must attend face-to-face sessions in addition to studying at home. This model is noteworthy because the correspondence element is reduced to a minimum and the emphasis is placed on regular attendance at study centres or face-to-face discussion with the tutors. Once the learning materials are developed and distributed to the students, the system relies heavily on private study, with motivation, clarification, and evaluation of learning provided by the tutors in the study centres.

The integrated model

- The distance learners are kept parallel with a group of on-campus students and their progress is monitored against the on-campus students. External and internal teaching are integrated. The same staff teach and assess both sets of students, who are enrolled in the same courses, take the same examinations, and qualify for the same degrees and diplomas. The "Off Campus" model of the University Sains Malaysia may be cited as an example.

Distance education: an innovation in non-formal education

Distance education mainly belongs to non-formal adult education although special forms of supervised distance study have been developed in the post-colonial period, both developing and developed countries having begun to conceive of education as something broader. It is now being emphasized that all human beings in possession of their faculties are learning all the time and throughout their lives. Some learning is informal; that is,

gained incidentally and casually, from conversation in the market or a rural programme on the radio or the publicity posters on the thoroughfare. When learning is consciously promoted, it then becomes part of the process of education. The rediscovery that education can be lifelong is due to the accelerated pace of change in the twenthieth century. With constant development in science and technology, with new means of communication such as radio and television, with major alterations in political institutions, any person who does not keep himself updated is condemned to be overtaken.

If education is lifelong, it follows that it can be pursued at any age, though it is recognized that some types of learning, particularly of skills, may depend on youthfulness; for example, one cannot easily imagine a person of sixty starting to learn driving. Some ways of teaching or promoting learning may be more suitable for children and others more suitable for adults.

The concept of non-formal education

"Non-formal education" is a term used to characterize educationally oriented measures that are carried out by various bodies outside of the normal school organization of a country, and intend to reach such target groups, the composition of which is heterogeneous as far as age, previous education and occupational activities are concerned. In contrast to "formal education", which is built up according to a hierachy, conveys certain qualifications and usually comprises uniform courses of education that run for a few or many years, the measures and events connected with non-formal education usually include course programmes of varying length, that provide training and further education facilities, as well as product and project advisory services for vocational or leisure activities; they are widely ascribed to the category of adult education and therefore follow their own inherent laws. Whilst participation in the measures and events of non-formal education is voluntary in most cases, the target groups are sufficiently motivated by vocational and, sometimes, economic and leisure time interests.

The educational advantage of non-formal education lies not only in the above-mentioned motivations behind participation, but also in the speed at which measures can be organized outside of the educational bureaucracy, which is often rather sluggish; in addition, it shows high adaptability to give peripheral conditions related to personnel or subject matter. These

factors make non-formal education an important educational instrument for these who drop-out or discontinue for one reason or the other.

Non-formal education programmes permit the flexible use of learners, time and as such offer possibilities of economizing it. Accelerated courses are offered by cutting the total duration required in formal courses and creating free time for other educational or non-educational uses. Leisure time of the students during evenings, weekends and vacations are used for part time learning which results in reduced cost of learners' time spent in education. During on-the-job training or apprenticeship, learners produce goods and services while learning. The phasing and sequencing of syllabi and courses of existing formal programmes may be altered to evolve sandwich courses, skill modules, self-instructional materials, permitting both use of free time and reduced opportunity cost depending on courses and the nature of alternations.

Distance learning system as a form of education, therefore owes its innovative form to the non-formal system. Embodied with all its characteristics, distance education is now being recognized as an approach which can help a large majority of people who are motivated by economic or leisure time interests. They can have an access to education on a more extensive basis without staying away from their jobs. On all counts, therefore, it becomes evident that it is an innovation in the non-formal system though being established now on sound parameters with clear objectives to achieve. The target groups of this system are working adults, graduates or drop-outs of secondary education—diverse in maturity background, life style and motivation.

Distance education and the world of work

Education must, under all conditions prepare young people for work. Work therefore must be allowed to play an important role in education. Work being a fundamental human right, must be represented in the content of education in a suitable manner. It must offer well-founded knowledge concerning the function that work has to fulfil. This is to ensure the continued existence of human society. Education must also instil in young people respect of, and a readiness for work and introduce them to different kinds of work activities and jobs. Thus the content of education must not primarily be related to leisure or culture as such, but to the social reality that the rising generation will later be confronted with. The picture that children and adolescents are given of work in this process must be in keeping with this social reality and its trends of development; it will therefore have to be partly different under different social conditions.

Because of socio-cultural constraints as well as political compulsions, the content or nature of education may not be in a position to meet the determined requirements of a society. With the increase of industry and technology the educational system has forged a closer link with productive and economic life. People in the world of work from the highest to lowest categories, are sharing their time between the working and cultural world.

Most people who like to continue their education at home at a later stage in their work career take support of new media like correspondence education, television and radio. Distance education or open learning system which all these media is becoming an increasingly common form. On the one hand education related to certain occupations or professions is imparted; on the other hand, there is room for a continuing education for those who have dropped out from the formal education system.

It has generally been observed that most students who drop-out of school do not have any marketable skills because schools do not provide any skill or vocational training. Schools have missed the opportunity for developing rural crafts. Local resources are not harnessed for the education of youth to enable them to be integrated into their respective environments. The content of the curriculum does not take into account the needs of the rural environment. Consequently, the child is cut off from the realities of community life.

Thus the formal system becomes an obstacle to progress rather than the answer to the planner's dreams. It is considered to be an expensive luxury, absorbing an ever-increasing share of economic resources, producing either a conservative elite, committed to maintaining existing income inequalities, or unrealistic school leavers with aspirations that made them unfitted for actual job opportunities.

The answer lies either in a radical restructuring of the education system or exploring alternative ways of educating the illiterates or drop-outs or those who want to enhance their education for higher status and more income without leaving their job or vocation. This alternative way of education is nothing but distance education which assures both education and work.

The Soviet Union, as an example, has taken distance education seriously for longer than many countries, with its principal correspondence college, the All-Union External Polytechnic Institute, going back over 50

years. The peculiar strength of distance education there lies in its integration with work. As students study on their correspondence courses so, it appears, they are gradually promoted to better jobs. Their practical work is often done at their place of employment. They get paid study leave a year to attend residential courses and take examinations.

The world of labour demands not only scientists and technicians but also other experts and skilled workers. The existence of social factors such as the democratization of society or the right to education and work for each citizen demands that most educational structures must undergo great changes and that new modalities should emerge in the education/work relationship.

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DISTANCE TEACHING IN RURAL PAKISTAN

by

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FEPRA Consultant, 1982–85

Can distance teaching contribute directly to rural development? Can a university reach ordinary men and women in villages and help them to improve their day-to-day living conditions? If so, how can this be done?

On 30th June this year, Allama Iqbal Open University completed a three year research project designed to explore these questions. Known as the Functional Education Project for Rural Areas (or, more conveniently, as FEPRA) this project was run in collaboration with the International Extension College, U.K. and with financial assistance from the British Overseas Development Administration.

FEPRA was set up :

1. to devise and try out ways of gathering information about rural learners :—
   (a) to help decide what types of course will benefit the village community and what distance teaching methods are appropriate;
   (b) to help course producers to decide on the content, level and treatment needed for particular courses;
   (c) to show, through the pre-testing of course outlines and materials, how successful a course is likely to be and what revision may be necessary; and
2. to develop and test an outreach system which will carry the courses effectively to village learners using distance teaching techniques.

Using a small test-bed area of some 50 villages, the project has conducted background research studies designed to give an in-depth understanding of the educational needs, the priorities and capabilities of rural communities. FEPRA has also assisted the University's course production staff by helping to develop a distance teaching methodology appropriate to village learners and has carried out a series of studies of their existing knowledge, attitudes and practices with respect to five basic functional courses.

Course outlines and draft versions of course materials have been pre-tested on village samples, and completed courses have been put through a number of pilot test cycles and evaluated. Finally, an outreach system which carries the courses to village learning groups has been developed and tested.

Five basic functional courses for rural adults were developed by the University during 1983 and 1984. These were :

Child care (for women)
Electricity in the village (for men)
Poultry keeping at home (for men and women)
Livestock management (for men and women)
Agricultural credit (for men)

The first three were produced by adapting existing courses designed for higher levels. 'Livestock management' was added in response to suggestions made by participants in the earlier course cycles, and 'Agricultural credit' was initiated and developed in collaboration with the Agricultural Development Bank of Pakistan.

The aim of providing these course was to help learners to adapt to changing living conditions and prevailing pressures in the village by adopting new ideas and practices. (Note that this did not include teaching people to read or write. The basic functional courses were seen as being distinct from literacy work which requires different teaching methods. Future plans however envisage the possible coordination of the two approaches so that illiterate learners who have taken one or more basic courses may go on to learn to read and write.)

The courses were open to all interested adults and were conducted through village meetings in groups of about 20 learners. Simple audio visual aids were used, appropriate to largely illiterate target audiences and the need for materials which were robust, easy to operate and independent of a reliable source of mains electricity. For each meeting an audio-cassette (recorded in the local language) introduced the course topic and structured the learning process. A flip-chart* containing pictures and diagrams (with simple captions for those who could read) helped to hold the learners' attention and to clarify and reinforce messages on the audio tape. A variety

*10–15 pages of good quality cartridge-paper held by a wire spine in board covers. This construction enabled the flip-chart to be self-standing on a table, with the pictures large enough to be seen by a group of twenty. The group-leader turned the pages when so instructed by the audio-tape.

of charts, models and other materials were used in demonstration and practical activities, and a hand-out sheet, incorporating smaller versions of the flip-chart illustrations, was used as an aid to revision and as reference material to be taken home by each learner.

The materials were presented by one of the learners whom they had appointed as Group Leader. This person was also responsible for gathering the group for each meeting, leading discusions and practical learning activities and providing feed-back to the course producers. A week's training in these skills was provided in a nearby village, and the Group Leader received guidance during each meeting through instructions included on the tape. Note that the Group Leader was not a teacher or a subject matter specialist. In this distance teaching programme the teaching skills and information were provided by experts at campus and were presented through the course materials themselves and not the group leader.

In all the courses the aim has been to get the learners to examine critically in group discussion the new ideas and information presented to them, to relate these to their own experience and local village circumstances and to decide what follow-up action to take. Discussion was therefore an important component in every meeting and this, combined with practical exercises, helped to involve all participants actively in the learning process. Where possible the information was presented, not simply as a series of instructions (what you should or should not do), but included explanations of the underlying principles so that the learners could understand why instructions were offered and could apply them intelligently. An important aim of each course has been to help people to identify common problems and to decide on how possible solutions might be found.

Developing distance teaching materials for village learners requires special skills. Aided by the feed-back gathered by FEPRA during pilot-course cycles, AIOU's production teams have been learning how to communicate more effectively. The starting point must be the learners' existing knowledge, attitudes and practices. Information must be presented for their point of view and not in a theoretical, text-book manner. Long passages of 'lecturing' on the cassette tape do not lead to effective learning, and need to be broken up by drama, recorded interviews or group activities. The presenttion of important facts needs to be carefully paced, and repetition and active learner involvement are essential. Illustrations may need explaining and must be carefully linked with the audio tape.

FEPRA has developed on outreach system designed to carry the courses to large numbers of village learning groups in a cost effective way. A small mobile team of University field workers (four members and a leader) working with locally recruited part-time Assistant Supervisors can reach approximately 5000 learners in two cycles per year. Field trials have demonstrated that each field worker can supervise up to six Assistants who in turn can supervise five or six groups situated in nearby villages. This gives a ratio of 600 or more learners per full-time field worker.

The mobile team starts each cycle by setting up learning groups and training group leaders and Assistant Supervisors (who have often been Group Leaders themselves in previous cycles). A schedule of dates for course meetings is prepared which will enable the Assistant Supervisors to visit each meeting of each their groups on foot or using local transport.

Each group holds a preliminary meeting at which learners are registered (on payment of a nominal fee) and the members then decide at what time and where they wish to hold the course meetings. They then listen to a short introductory tape which includes a welcoming message from the Vice-Chancellor. At this meeting the Assistant Supervisor delivers the course materials to the Group Leader.

For a number of reasons it is important that AIOU collaborates closely with the agencies, both government and non-government, already involved in rural development. For one thing, the basic functional courses should be designed to complement and support, not to duplicate or conflict with the work of local extension agents. Secondly, if the courses are to encourage learners to apply new ideas, it is essential that the necessary facilities and long-term support are available in the areas concerned.

Thirdly, although the University could, in the manner described above, reach many rural learners, it could not through its own resources expect to make a significant impact on the nation's 45,000 villages. With the assistance of local field staff of other agencies however, the courses could be carried to a much larger population.

Collaboration is therefore needed during the design and production of the courses, in the presentation of the courses and in long-term support for the learners after the courses have been completed. FEPRA has found an

encouraging response to these ideas from a number of organisations. Representatives from the departments of Health and Livestock and the Women's Division have participated in course production, WAPDA (the organisation responsible for electricity supply) has offered to print course materials. The Provincial Livestock Department and Agricultural Development Bank have directed their local field agents to participate in the presentation of courses and have begun what is hoped will be a fruitful relationship with the participants in poultry, livestock and agricultural credit groups.

Careful monitoring of the courses over three pilot cycles revealed a number of positive facts :—

(a) Villagers are attracted by the courses (the majority of villages approached decided to form at least one learning group and some were involved in more than one cycle of courses).

(b) They will attend group meetings regularly (the average drop-out rate was in the order of 10% — a very low figure even though the courses were short).

(c) They can learn from the courses (as demonstrated by knowledge tests administered by interviews with a sample of learners before and after each course).

(d) They do apply some of the advice offered in the courses: participants have, for instance, got their children vaccinated, purchased improved breeds of poultry, monitored their use of electricity through meter reading, given their cattle balanced feed and applied for agricultural loans.

These findings, which have been persistent, over the three cycles are very encouraging. They are, of course, only a start. There is much room for improvement, particularly in the quality of the learning materials, and one of the most important lessons learned has been the need to base course production on carefully executed action research.

The University is now considering ways of incorporating the lessons learned through FEPRA into a long-term programme of basic functional education — a programme that could eventually include second stage courses, literacy courses, and courses for urban as well as rural learners. Not

all are agreed on how to fulfil the University's brief to cater for the uplift of the masses and doubtless the debate will continue. In the meantime, however, a workable methodology and outreach system have been developed and the AIOU has the knowledge, skills and experience to make a very valuable contribution to rural Pakistan.

A more detailed account of the FEPRA experience will be published by the International Extension College early in 1986.

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DISTANCE EDUCATION

A CASE STUDY OF SWEDISH AND CANADIAN MODELS AND THEIR COMPARISON WITH THE ALLAMA IQBAL OPEN UNIVERSITY, PAKISTAN

by

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Is education a process of nourishing someone to the growth of a special kind of behaviour? Or is it an aggregation of all the processes by means of which a person develops ability, attitudes and other forms of behaviour of positive value in society? Is it an art of making available to each generation the organised knowledge of the past? It could be argued that a true education involves free access to knowledge of both the past and the present and that is an extension of such access by distance education never means and methodologies, such as off-campus study, correspondence courses, with radio, television and other audio-visual media.

Cropley and Kahl define distance education as being essentially based on "communication procedures". These procedures assist the learning processes towards their main objectives. In such learning processes '..... no face-to-face contact between the teacher and the learner need exist."[1]

Many scholars have attempted to analyse the importance of distance education and have pointed out its weaknesses and strengths. In this study an effort is made to examine and compare the contribution of some of these scholars. To this end, this paper takes three models of Distance Education, the Swedish model, a Canadian Model and the Allama Iqbal Open University (AIOU) model. The last one will be the main focus of this study to explore and assess the varying views of scholars on the concept of distance education. It is widely accepted that distance education has emerged as an innovative means to provide education to the common man in both developing and developed countries. To quote the views of an author on distance education it has been described as :

> "a land of contrasts. Now here are these more evident than in the technologies ued by distance teaching institutions. With great promise for the future, in principle, it implies a commitment to increased accessibility to a vast variety of audiences."[2]

From the above point of view, accessibility is seen in terms of a wide variety of audiences, coupled with a *wide-range of educational objectives.* The emphasis is on "the use of an array of communication technologies". This is further confirmed by R. McCorn :

> Most educators would now agree that the broadcast media have a valuable role to play in education. Even within the context of formal education, broadcasting has been used both in institutional settings and in people's own homes.[3]

The Swedish Model

Scholars argue about the importance of educational technology in many ways. John Baath and Birgitta Willen[4] maintain that in Sweden distance education was started 150 years ago, although they do not suggest any exact date. However, from the Baath/Willen study it appears that it was a small-scale "handicraft" type operation. The correspondence courses started by H.S. Hermod in 1898 became a large-scale operation. There were two institutions. (1) The correspondence school of Swedish National Defence and (2) the correspondence teaching activities of the Council of Studies of the Swedish Commercial Banks.

These new correspondence teaching institutions inspired many Swedish people. Their certificates secured recognition on the labour market. It appears from the evidence that several leading Swedish scientists, administrators, politicians, authors and scholars received their education through these distance educational institutions by means of correspondence study.

Between 1940–60, a sign of favourable acceptance was the recognition of supervised correspondence study which was given by the public authorities. In this regard the Swedish Board of Education and Swedish Broadcasting corporation were authorized to provide educational facilities to all teachers. In the mid sixties the enrolment reach 150,000 and thus this became the largest distance teaching institution in the world.

It also appears that since the early fifties Liber-Hermods (an educational trust) has also organised correspondence courses at university level, although currently only a few courses are being offered by this correspondence school. It is also interesting to note here that practically all of the distance education at university level in Sweden is organised by the universities themselves. This is also found in the United States educational

institutions, the so-called the continuing education system, which is a kind of non-degree programme for functional education.

We could say that the 'Swedish distance education model' is highly decentralized, and hence each university is intended to implement distance education basically on its own. The university departments are responsible for subject content and the customary planning of courses. The staff are authorized to create and use new approaches for distance education. Distance education is regarded as a complementary form of study, a parallel to evening classes and local external courses.'[6]

The overall responsibility was originally handed over to chancellors of the Swedish Universities. After the 1977 reforms it was transferred to a six newly established "Regional University Boards"[7], which cooperate to coordinate the planning of distance courses.

Swedish distance education programmes in their approach are based on self-study. The same text books are used in distance education as in the traditional universities. Willen in her article, reports on the general design of the institutions and their characteristics that :—

- — the same examinations are held, both as regards form and content.
- — all have written study guides commenting upon the text books used.
- — assignments have to be sent to the university at regular intervals.
- — meetings are held at the university at least three times per term.
- — audio-cassettes are used, but TV cassettes rarely.
- — a telephone service is also available.[8]

For student and teacher contact the telephone services and audio-cassettes are used. Throughout his course work a student has only one teacher who acts as his guide or adviser. The Chairperson or the Principal makes such arrangements.

In academic areas the courses are offered with a wide choice: law, theology, health-care, arts, social sciences, natural sciences, technology, forestry and teacher training. The University of Uppsala, like Liber-Hermods, also provides distance education courses to Swedish people living abroad[9] (as does the AIOU).

In the area of evaluation a study of their distance courses was undertaken for all the universities. The findings sugget a very high degree of satisfaction among the participants, although "Generally the evaluation showed that there was a marked need for components with a "feedback" effect, such as the telephone, letters, study circles and meetings at the university (with teachers)."[10]

Evidence suggests that the teachers respond positively towards this kind of education and almost fifty per cent of the teachers concluded that their contacts with distance education were better than the contacts they had with their regular students. The positive communication on the telephone contributed to this.

This Swedish decentralized model has many merits, but feedback seems to be one of its crucial problems.

Alberta Model

Our second model is Alberta Correspondence School in Canada which has been described by Balay.[11] Enrolment is about 28,000. There is a standard curricula for classes 1 to 12. The school also offers upgrading and personal interest courses. Those seeking a high school diploma may take upgrading courses and can qualify for diploma courses. If students already have some high school courses they need take only such courses which are designed to prepare them for university or college entrance. The programme prepares students to write entrance examinations in many areas.

The courses available include "98 senior high school courses (Grade 10—12), 50 junior high school courses (Grade 7—10); 37 adult upgrading or personal interest courses and 20 elementary courses (Grade 1—6)."[12] The Elementary courses include art, music, reading, spelling, sciences, languages and mathematics. In order to handle and process the lessons, there are eighty-one full-time teachers, fifty-one on contract and seventy-seven administrative staff, managers and clerks. In 1982-83, this full-time staff of 158 served 27,923 students and 215 distance education courses were offered.[13]

Balay reports that radio and television are increasingly being used. It seems that the first attempt was made in 1940, with radio, when the Ministry of Education realized a need to provide education for the people of

northern Alberta. This was taken further when audio tapes were eventually introduced. "Each broadcast ended with a short dictation assignment which the students were supposed to submit later for evaluation."[14]

Programmes included discussion of "current affairs", "career opportunities", science, music and literature. The use of the telephone as a contact source between the students and teachers is also strictly observed.

Courses on Home Economics are being offered through television. Presently a series of seven programmes on the subject of English has been offered for grade 12. The first programme for this was launched in October 1983. The Alberta government has established a corporation called ACCESS which is responsible for providing educational radio and television programming. Also—

> A communications satellite is used to provide some programming to the remote northern regions..... 9 daily newspapers which reach over 80 per cent of all households..... The province has an exclusive telephone system with 1.5 million telephones in service in 1979. A radio-telephone link provides for communication with isolated areas.-[15]

Therefore we could argue that in both models, Swedish as well as Canadian, the public authority has played an important role. However, on the Canadian scene as the result of public and private interest, an association was founded in 1983, called "A New Distance Education Association". Its aims are (1) To provide ideas and information on the subject of distance education. (2) To examine educational issues and forward proposals to the provincial and the federal governments. (3) To help in providing professional teaching in the field of distance education. (4) To provide cooperation in the use of hardware and software.

Allama Iqbal Open University (AIOU)

Our third model is Allama Iqbal Open University. The institution was established in 1974. Between 1974—82, the institute struggled to develop the necessary structure for the production of courses through correspondence, radio and television. The medium of instruction is Urdu, most of the courses are being produced in that language.

Radio and TV programmes were initially produced in collaboration with the Pakistan Broadcasting Corporation and Pakistan Television Corporation. There were many shortcomings both financial and academic and the arrangements were not totally satisfactory. AIOU decided to produce its own radio programmes which it did in an improvised studio. In 1983, it opened its own purpose-built radio and TV studies with assistance, respectively, from UK/ODA and UNDP.

The institution's studios have the capacity to produce 750 radio programmes and 100 TV programmes per year. The University's Triennial Report 1979–82[16] shows that in the period 1979–83, the student course enrolment increased from 46,775 to 65,237. The number of courses also sent up from 34 to 65. Radio programmes rose from 374 to 756, and TV programmes increased from 98 to 140. The number of course books printed rose to 84,000.[28]

On the administrative side also AIOU improved its functioning. The system of admissions and examination records has been computerized. On the academic side the institution received improved facilities with its new library and print services building.

The University has four programmes: (1) Teacher Education. (2) Functional Education (3) General Education (4) Research and Evaluation. AIOU offers courses in basic sciences, social sciences, languages, teacher's training, Educational Planning and Management, functional education (health, sanitation, nutrition, agriculture, marketing, livestock, social issues, electric wiring and typing) and Research and Evaluation projects.

Comparison and Findings

Compared with the Swedish and Canadian model, AIOU from its short existence and experience has contributed much and is far ahead in its academic achievements. One thing which is commonly found in all three models is that public authorities have contributed equally to the gorwth of the institutions.

On the Swedish scene, the conventional institutions and distance learning institutions are using the same course books, where AIOU and Alberta are supplying their own books. The use of supplementary material,

study guides and the assignments are designed and supplied at regular intervals, in all three models. "Feedback" is a crucial issue in the Swedish model, which is really difficult to judge in other two.

The Swedish and the AIOU models provide their study facilities to their countrymen living abroad, which is not the case in the Alberta model. On the Canadian and the Swedish scene there have been organized efforts to put distance learning on a national level:

(1) A coordination of all universities in Sweden; (2) Canada has formed an association, the Canadian Association for Distance Education (CADE). On the Pakistani scene such an effort is still missing.

There is not such a wide variety of courses being offered on the Canadian scene, whereas the other two models provide a better choice, with a good number of courses.

A Choice Ahead

Professor I.N. Hassan in her article has emphasized the social, political and economic reasons in the historical background to the setting up of distance learning institutions:

> Distance Education is a generic term that includes the range of teaching/learning strategies referred to as correspondence education or correspondence study in both developed and developing countries; as home study or independent study in the United States of America; external studies in Australia; *t'el'e-enseighement* in France; *Fernstudium* or *Fernunterricht* in Germany; *education a distancia* or *ensenanza* in Spanish speaking countries and *teleduca, cao* in Portuguese.[17]

So it appears that distance education could be very successful based on open university used in several countries to provide education and training to the people who could not leave their homes, jobs for full time studies. Therefore this system is practical to provide facilities through correspondence courses, tutorial seminars, radio broadcasting and television.[36]

Those who view distance education not good for education, do not travel in space and time. They just refer to the old traditions. In this modern

age when science and technology are becoming more and more important and the needs of the people appear different ways. The academicians should develop new approaches, i.e., Distance Educational system.

At the same time we cannot ignore the conventional system where students get what is already known to educators, but they learn to think for themselves. A new self thinking based on the "freedom of knowledge" about the contemporary learnings, which seems to them a growing field from its new opportunities. As some suggest:

> He who learns from one occupied in learning drinks from a running stream. He who learns from one who has learned all he has to teach drinks the green mantle of the stagnant pool.[36]

What some has quoted :

> "Teaching is seen as an activity encouraging and facilitating learning and distance education as a whole as a learning-centred system."[37]

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ROLE OF DISTANCE TEACHING IN PRIMARY TEACHER EDUCATION

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Introduction

The idea that education is for all the people and that it is a life-long process which can continue through adult life is being accepted more and more widely. The introduction of free and compulsory primary and secondary education in many industrialized countries in the late nineteenth century has increasingly by produced an adult population which has provided the base for the establishment of further education for its progressive extension.

The developing countries consider educational programmes a basic requirement for their economic development and political independence. The existing formal systems of education obviously cannot cope with the demands of education for all. In an effort to extend educational opportunities similar to the formal system to every age group and people from different social backgrounds, the nations have to look for alternative means. Distance teaching apparently appears to be answer to the growing needs of such nations.

As in other developing countries, education is a priority sector in Pakistan. On it depends, very largely, the economic development of the country and progress at present as well as in the future. Like most developing countries, Pakistan is expanding her 'educational system almost to financial breaking point and is committing vast amounts of money to provide the facilities of education to the common people'.[1]

It is a two-fold problem :

(i) Educating the masses, making them literate and providing them with basic skills;

(ii) Adopting strategies to achieve this objective in as short a time as possible.

The national objectives have been set out in the Report of the Educational Commission (1959) and the Educational Policies (1972 & 1978). Considerable progress has indeed been made over the last three decades in the number of institutions of formal education established at various levels and in the enrolment of students. However, mass education remains a problem and literacy at the national level is still at 26%.[2] Immediately related to mass education is basic (primary) level education. At this level substantial expansion has already taken place as is indicated in table 1 below :

Table 1

Enrolment in Primary Schools[3]

(Enrolment in Lakh)

Year	Enrolment in primary schools	
	Total	Female
1973-74	48.1	13.6
1982-83	68.00	22.00

As is evident from table 1 that 41.32% enrolment has during the last decade in primary schools. A basic requirement at primary level is the provision of qualified and trained teachers. All measures aimed at expanding primary education largely depend on the success of teacher education at the primary level. Training is not a static phenomenon. In the fast developing modern world training for basic education needs to be geared to the latest developments in the techniques of instruction and to expansion in the various branches of knowledge.

This paper looks at this crucial aspect, *i.e.*, training teachers at the grass root (primary) level. The teacher, as it is observed, "is the central figure in all educational activities and can perform a vital role in spreading education and in reforming the society through dedication, perception and example".[4] Existing institutions train teachers and provide them with basic instruction for primary and secondary levels. Their specific purpose is to

meet the shortage of trained teachers. Formal training, however, does not end with teachers passing out of training institutions. To keep teachers conscious of the latest developments in knowledge and teaching skills, and to develop "competency-based teacher's education particularly at the primary level, continued orientation of teachers is of vital significance".[5] In Pakistan, the training institutions have, for some years, been arranging workshops and short-term courses periodically or in cycles. To these, however, only handfuls of teachers can be admitted. Orientation of the evergrowing mass of primary teachers has remained a gigantic problem.

Allama Iqbal Open University and in-service orientation

Allama Iqbal Open University, an institution promoting distance learning, is particularly suited to a task of this nature. The objectives[6] of this institution have been spelled out in the Education Policy (1972). Thus the University was established to provide part-time educational facilities through correspondence courses, tutorials, seminars, workshops, laboratories, television radio broadcasts and other mass communication media. The institution has the Primary Teacher Orientation Course (P.T.O.C.) as a priority programme. It was initiated in 1976-77 and is conducted in cycles through such non-formal methods of correspondence and radio, tutorials and seminars. The University has developed this programme of distance teaching in the following specific areas relevant to the primary level and in keeping with the latest syllabuses :

1. General Science, including Population Education
2. Mathematics
3. Social Sciences
4. Arts and Crafts
5. Health and Hygiene
6. Adult Education
7. Urdu
8. Islamiat
9. Examinations and Evaluation.

The written material in each area consists of unit lessons, each a self-explanatory composition in which the theme has been developed in simple and informal language and in distance education style. Lessons have been set in a format that makes them distinct from the commonly used textbooks in formal education.

There are three main objectives of this training course. Firstly, to familiarise the primary teachers with new elements of the revised primary school curriculum. Secondly, to increase their knowledge in the appropriate subject areas and help them to develop their teaching skills. Thirdly, to provide them with an opportunity in terms of improving their qualifications by counting the primary teacher orientation course as one course credit for the intermediate certificate. There are 18 radio programmes of 15 minutes duration spread throughout the course which elucidate and expand some of the concepts and other content of the written material. The programmes give instruction in science, history, sociology, languages, Islamiat, arts and crafts, with emphasis on the science of teaching. They familiarise the teachers with new approaches to transmitting or imparting knowledge to their children.

Course assessment takes the form of four written assignments during the period of the course. These are marked and commented upon by the student's tutor. The examination is held at the end of the course at examination centres according to the location and distribution of students. The overall grades for continuous assessment and for the examination are combined to produce a final course result for each student. The course assessment consists of :

(a)	continuous assessment :	40%
(b)	end of course examination :	60%

Tutor student contact is provided throughout the course. Normally 30—35 students are alloted to a tutor. The tuition is of two kinds. Firstly, through the comments and suggestions made by the tutor on student's assignments. Secondly, by means of a programme of tutorials, at which student groups can meet their tutor and receive help with any study difficulties.

Registration of primary teachers for this course is done through nomination by the District Education Officers. They inform students concerning registration for a particular cycle. Then course material is despatched to the students when the course starts. By the end of 1984, the University had run fourteen cycles of the course and total enrolment reached 77,205. However, 39,000 teachers completed the course during this period out of whom 27,808 teachers passed.

Components of distance teaching and their use

Distance teaching is a composite or combination of the effective use of mass-media such as radio, T.V. correspondence material and a variety of audio-visual aids and study centres. Let us examine the utility of various media for the Primary Teachers Orientation Course.

Radio

No doubt radio as an educational medium can reach over as wide a distance as reception will allow. It is also economical for material can be prepared and recorded and used as many time as required, with the cost of further transmission only. High quality content and well written scripts can be used with a very wide coverage. The programmes can be heard inside the home if necessary, thus making them more convenient and can be used as complete teaching courses or can be integrated with face-to-face teaching courses or used in conjunction with correspondence courses. Radio programmes can not provide visual help and there lies their limitation, so there is a variety of subjects which cannot be taught. Similarly, the lengthy regular radio programmes unsupported in other ways produce difficulties of monotony and students lose their motivation.

Television

Television is proving to be one of the most versatile audio-visual aids ever developed. Television is appealing to the eyes as well as to the ears. Therefore, a much wider range of subjects can be taught. This involves a wider range of teaching methods and aids. Teaching by demonstration makes instruction effective particularly in the applied and physical sciences. Some limitations are also there, however, in the use of T.V. Firstly, it can never replace face-to-face classroom teaching as it lacks the personal touch that exists between a teacher and a student. Secondly, questions and answers and discussion which makes good teaching cannot be reproduced on T.V. Thirdly, it is costly also. The pace of teaching is also fixed and can proceed neither more slowly nor faster than the machine. But some of these disadvantages are overcome when the T.V. is supplemented by some face-to-face teaching. In the Primary Teachers' Orientation Course, this medium has however, been excluded for the time being for the reason that it is more costly and has less coverage than radio.

Correspondence material

The printed material, forms the bulk of the distance teaching programme. Such material can provide a cheap but practical way of educating a wide range of people who cannot attend or do not have the opportunity of attending regular classes. Instruction is individual and each student can move at his own pace. It can also provide thorough teaching. The students move systematically through a field of study going on to new material only when the previous material is mastered. Education can be continued while students are working and earning.

Study centres

Study centres are the places where students meet their tutors and fellow students. These centres provide additional opportunities for learning. Study centres are usually based in local educational institutions. They are open in the evening and on specified days and times. The tutors are appointed on a part-time basis. Their work is supervised by the full-time Regional Director of the area concerned.

Audio-visual aids

Audio-visual communication enables teachers to reach a great number of external students when used as a component of distance teaching. But the response to such methods and the individual follow-up can be given by correspondence material. Film strips, films and slides, recorded cassettes, photographs, diagrams and sketches and demonstration are the audio-visual elements which can be and are used by Allama Iqbal Open University.

From the above analysis it appears that the existing training institutions are hardly adequate to meet the requirements of the nation so far as the in-service training of teacher is concerned. Allama Iqbal Open University fills this gap by providing the much needed orientation programmes which are conducted in cycles. Thus distance teaching has acquired a great significance in the development of teachers' training programmes at the grassroot level. Mediawise, the future of T.V. is limited both on account of economics and the limitations of existing T.V. ownership in Pakistan. Therefore, the material in print and the spoken word are going to play a vital role for a long time to come. However, it has to be seen how far these media have been effective.

Critical appraisal of the media used

From the thirteen cycles of the course that have been completed, certain weaknesses and limitations of distance teaching have emerged. Thus we have to see how far this new experiment of non-formal distance teaching poses a challenge for our society. The limitations are of two types, (a) administrative, (b) social. The influence on the implementation of the course is significant. Administration covers the transmission of written correspondence material to students, the working of study centres/tutorials and coverage of radio. The social problems are rooted in the attitudes of teachers. Some aspects of their cumulative effect are explained below.

In a large part of the country, especially the hills and remote parts, means of communication are poor (in many high ground areas even non-existent). Added to this are the vagaries of weather, particularly in the hilly areas. These limitations hamper transmission of written material to students. At times in rainy and snowy seasons the printed material, which is the most important and basic component of the course does not reach a large number of students. Also, students do not have regular contacts with the study centres, which are at present located at the district/tehsil level and they are, therefore, unable to avail themselves of the academic facilities and guidance provided there.

Two factors work against the operation of the radio component :

(i) People are poor and their level of income is very low;

(ii) Large parts of the country are underdeveloped.

The University conducted a survey[7] in 1984 for assessing the effectiveness of the Orientation Course. Results on the different aspects of the programmes were calculated from 1200 replies received. The following Table 2 shows the position of the radio programmes.

Table 2

Attitudes towards Radio programmes

No. of teacher—students: 1200

Item	Category of assessment	
	n	%
(a) Possession of radio and access to it:		
(i) Have radio	492	41
(ii) Do not have radio but have access to	240	20

(iii)	Do not have radio and also not access to	468	39

(b) Those who heard radio programmes :

(i)	Social Sciences	696	58
(ii)	Mathematics	648	54
(iii)	Urdu	672	56
(iv)	Islamiat	648	54
(v)	Arts and Crafts	684	57
(vi)	Science including Population Education	720	60

(c) Usefulness of broadcasts, as rated by those hearing them:

		Useful		Not useful	
		n	%	n	%
(i)	Social Sciences	517	82	No Response	
(ii)	Maths.	518	80	—do—	
(iii)	Urdu	628	84	—do—	
(iv)	Islamiat	620	76	—do—	
v.	Arts and Crafts	716	84	—do—	
vi.	Science including population education	614	80	—do—	

From (a) and (b) it is evident that a large part of the clientele of the course are deprived of the benefits of this component and cannot avail themselves of the University's programmes. A little over half of the students heard radio broadcasts, but most of these teachers are conscious of the value of these programmes (c).

Table 3 reflects the views of teachers about the correspondence materials. These give some idea as to how far the content of the printed material is attractive and comprehensible and how much interest it evokes in them.

Table 3

Level of difficulty of the units[8]

No. of teacher—students : 1200

Unit No.	Unit title	Difficult		Average		Easy	
		n	%	n	%	n	%
1.	System of education in Pakistan	192	16	672	56	336	28
2.	Teaching of Urdu	60	5	828	69	312	26
3.	Urdu reading	72	6	804	67	324	27
4.	Urdu writing	108	9	840	70	252	21
5.	Set theory (Maths)	236	19.66	684	57	268	22.34
6.	Geometry and Graphs	216	18	636	53	348	29
7.	Arts and crafts	144	12	744	62	312	26
8.	Adult education	204	17	612	5	384	32
9.	Ideology of Pakistan	252	21	636	53	312	26
10.	Plants and animals (sciences)	216	18	564	47	420	35
11.	Matter and energy	288	24	528	44	384	32
12.	Earth and the universe	180	15	588	49	432	36
13.	Evaluation and examinations	144	12	480	40	576	48
14.	Physical health and hygiene	120	10	540	45	540	45
15.	Methods of teaching	168	14	624	52	408	34
16.	Social studies	198	16.5	684	57	318	26.5
17.	Islamiat	180	15	636	53	384	32
18.	Population	120	10	552	46	528	44

Emphasis on the 'average' in response is understandable as distance teaching is a new experiment in our country and people are not familiar with it. Moreover, experience and clarity of conception on the part of authors are weighty factors. More than a third of the teachers found unit 13, 14, 18 to be easy while almost an equal proportion had difficulty in comprehending science unit 11. Teachers' response on the degree of interest they found in written material is given in table 4.

Table 4
Teacher's interest in the written material

No. of teacher—students: 1200

Subject/sample unit	Interesting	Average	Not interesting
Social Sciences	52.9	39.7	7.1
Science	50.0	40.0	10.0
Urdu	55.2	38.2	6.6
Islamiat	57.3	40.1	2.6
Mathematics	49.9	31.1	19.00

Apart from the quality of content of the unit, which results from the way it was used and the way concepts were understood, its attractiveness also depends on the quality of lay-out, print, paper and binding. More than 75% of teachers were satisfied with presentation and related attributes of the printed course material.

Conclusion

The final question, therefore is that of whether education is only an investment or a luxury? This can only be understood if the quality of teaching and the curriculum is relevant and (adaptable) to our social needs. The question of the acceptance of new techniques and their uses is often as important as their efficiency. The close involvement of the teachers themselves in developing the programmes is fundamental. Courses must be adapted or specially designed to meet the requirements of the prevailing socio-economic circumstances. Particular attention must be paid to the feedback from the audience so to understand their needs and thus re-building the programmes on the basis of responses received from them.

The costs and economic viability of a programme of distance teaching vary with the size of the size of the student population and its ability to pay. It is normally true, that the larger the student enrolment, the cheaper the cost per student. Distance teaching media play their part most effectively as instruments of mass-education of teachers. However their effectiveness depends more on other important aspects, *i.e.*, the efficiency of the postal system, timely despatch of materials to the students, appropriateness of exercises and the feed-back system. They should all click together and succeed. Allama Iqbal Open University is correct in not adopting T.V. as a medium for this course, due to the high costs involved. It does not hold

promise at least for the near future. But certainly distance teaching through radio is within the reach of the nation and its network should be expanded. Before embarking on this, several connected issues have to be well thought out and answered; the first being how effectively radio can be used in supplementing or strengthening the existing correspondence programme. Connected with this are the questions of having proper coordination between these two media of print and radio, their timing and sequencing. Another important factor is the supply of listening devices and their location.

The experience at Allama Iqbal Open University has shown that distance teaching media have a very definite advantage not only in strengthening the existing in-service programmes but also by making them more effective means of communication. It would be well advised to make similar use of the media for B.Ed. training in support of the training colleges. Such a use, by exposing the students to varied classroom situations and problems and by organizing seminars and group discussions on radio, can be provided with more intensive experience. This will thus go a long way to improving the regular B.Ed. training programmes as well. While doing so the deficiencies pointed out in the preceding paragraph need to be well taken care of.

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NEWS AND VIEWS

Towards the end of 1984 (and in early 1985) considerable activity has been generated on the campus at AIOU. New members have been appointed to the Executive Council; several distinguished delegations and consultants have visited the University; a major reshuffle and shifting of departments and servicing units to the new buildings has taken place to name a few of the activities. Some changes have also been introduced in the academic infrastructure, such as the introduction of the "Cluster" scheme. Let us look at the changing perspective in a little more detail.

New members of the Executive Council

The following new members have been appointed by our Chancellor, the President of Pakistan, to the Executive Council of the University, which is the highest decision-making body for the institution:

1. Dr. Mrs. Attiya Inayatullah,
   Member, National Assembly

2. Mr. A Jamil Nishtar, Chairman,
   Agricultural Development Bank of Pakistan

3. Dr. Miss Riffat Rashid,
   Punjab University

4. Dr. Mrs. Qamar Wahid,
   Sind University, Jamshoro, Sind

5. Maulana Abdur Rehman,
   Jamia-e-Ashrafia, Lahore.

Overseas delegations to AIOU

The AIOU has attracted the attention of several overseas governments and delegations in the recent months and a sizeable number of the University's programmes are beginning to get linked with overseas institutions. The linkage is both academic and financial with the result that the University's present and future programmes are assuming a cosmopolitan character with, of course, primarily a national bias-our final focus being on the clientele in Pakistan which has to be provided with the best available quality of educational materials.

The following delegations visited the University between the end of 1984 and the middle of 1985:—

- *Chinese Women's Delegation:* visited the University in February 1985. This delegation was headed by the Vice-President of the All China Women's Federation.

- *UNESCO* sponsored visit to the AIOU was arranged for Ms Uluhammer and Mr. Watt in March 1985. Both are working for the Swedish National Commission for Cooperation with UNESCO.

- A study visit to the campus of educationists from *Indonesia* was arranged April 1985.

- *A Maldivian Educational delegation* also came to the Campus in April 1985.

- *Under a US sponsored programme* Mr. William Edward Hess of the Education and Human Resources Division met with Vice-Chancellor and staff of the AIOU in April 1985.

- *Mr. W.E. Rees, of the World Bank* visited the AIOU in March 1985 to discuss the University's programmes and future developments.

- Several visitors from the UAE and the Muslim Middle Eastern Countries have been visiting the University. It may be recalled that some of the strongest AIOU programmes are those in the teaching of Arabic and the training of Arabic teachers. Substantial assistance is given to the AIOU in this connection by the Arab countries. Mr. Ezizuddin Ibrahim who is the Cultural Adviser to H.H. The President of the UAE came to the University in February 1985.

- The British Overseas Development Administration is also linked with several of the University's academic programmes and projects. This is in the areas of programme development, equipment and staff-training. Mr. Peter Scopes, Educational Adviser of the ODA came to the University in February 1985 to discuss the third phase of ODA assistance to the AIOU.

for the Faculty of [illegible]

Examinations, Computer Section and Research Centre. There is a separate block for the Administration Section. The Library and Institute of Education Technology have moved to a new buildings. Printing, Mailing and Admissions have also moved to a new building specially designed for the purpose. The English department has acquired several hundred specialist books in Applied Linguistics and TEFL through the courtesy of the USIS, the Asia Foundation and the British Council and have set up an English Language Resource Centre which is attached to the department.

Staff and Student Activities

An additional feature of the AIOU regeneration has been the initiation of several staff and student activities on an otherwise static campus. This has been made possible by the setting up of a Students Extra-Curricular Committee and its very active Convenor Shagufta Farooqi and Secretary Shahid Kaleem. Mushairas, musical programmes and enlightening lectures have been arranged on-campus for both the staff and local AIOU students and a separate set of programmes has been arranged at study centres all over the country in collaboration with students. Dr. G.A. Allana has been making a point of being present at several of these students' events.

An additional on-campus feature is the series of monthly lectures given for academic and administration staff. The lectures are on a range of general cultural topies, although their aims be directly concerned with distance-education. We also have the benefit of talks by visiting consultants on an aspect of their particular specialization.

Staff viewing-sessions of some of the latest University televison programmes are also held on a regular basis, sometimes in conjunction with the lecture-series. The sessions give an opportunity for members from all

— *Miss M A J Swinley*, British Council Controller for Africa paid a one-day orientation visit to the University in February.

— *Mr. R Sparkes*, Strathclyde University, Scotland a British Council consultant on computers in education toured the University's facilities and held discussions with departmental staff concerned with this field.

— *Asian Development Bank*. Two members of a visiting mission, Mr. Denis Chisman and Dr. Margaret Hurry, held discussions on science-teaching in schools. The University was later invited to submit a proposal for inclusion in the overall scheme being worked out in collaboration with the Ministry of Education.

Academic Programmes

The clustering or grouping of courses with a particular professional and academic focus will be offered by the AIOU at the BA level from October 1985 as follows:

The clusters at the BA level are eleven in number :

Business Administration
International Marketing
B. Com
Rural Development Studies
Population Studies
Library and Information Sciences
Mass Communications
Language & Literature
[illegible]

departments to discuss new ideas in TV presentation and generally to be aware of work in other subject areas.

Computer Centre

The work of the computer unit of the university is being expanded. Its future work will involve working on tutor-student allocation and tutorial scheduling, management information, personnel information, etc. The computer unit will also prepare student certificates and degrees and statistics for enrolment/pass-rates, etc.

Mirpur Model Study Centre

This new centre, at the Regional office, was opened in November by the President of Azad Kashmir. It was an impressive function and an indication of the official support enjoyed there by the University. The ground plans for a completely new Regional Centre are also in preparation.

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BOOK REVIEW

POST-EDUCATION SOCIETY: RECOGNISING ADULTS AS LEARNERS, BY NORMAN EVANS. LONDON: CROOM HELM, 1985. PRICE, £14.95 NET

A good deal has been written in the last two or three decades about eradicating illiteracy and moving towards the universalisation of primary and secondary school education. Much effort at national levels, both in the developing and developed countries, is also made to establish an educational system and policies which meet the needs of those already employed in the government, industry or agriculture. The growth and distribution of knowledge are rapidly making traditional methods of education obsolete, as a result of which new learning technologies are being developed which give greater potential than ever before to the possibilities of education as a means of social change. A great pressure on conventional areas of secondary and higher education and changing employment patterns have given a growing awareness of the vital role that the continuing education of adults plays in a society.

This book is one of a series which has the sole purpose of providing a radical forum for discussion of the whole field of adult and continuing education. Although all the books in the series represent radical thinking in education in Britain as well as abroad, the book under review makes sensible suggestions on educating adult learners. It elaborates (and concentrates on) the point that we must accept, while teaching adults, that the issues are as problematic and turbulent as about education in childhood and adolescence. Therefore it emphasises the pre-requisite of knowing about the growth and development of adults for improved teaching outcomes.

Alongwith exploring these implications of adulthood itself for adult learners, the book claims that adults flourish to the extent they have a sense of personal recognition and being of value. It stresses significantly the idea that the business of education is to enable people to gain the recognition of adults and their economic, social, and educational role in society. After describing "Post-Industrial Society" in Chapter one, "Adult Growth and Development" in Chapter two, and "The Structure of An Adult Society" in Chapter three, Chapter four "The Post-Education Society" discusses and describes the role of the institutions in recognising and using the adult learning in the whole process. It suggests that adult educational institutions

are required to become *resources* for learning instead of merely becoming *distributors* of learning.

In these contexts, we must re-think our education arrangement to take account of what is happening to the 70—80 per cent illiterate people of our country. We should also be prepared to recognise the validity of learning which may have been acquired by our adults from work and life experience, from private reading, from television, radio, magazines, from do-it yourself activities, from friends, and from anywhere in addition to the classroom. In relation to available knowledge of adult growth and development, it is suggested that adults should be put in charge of their own learning, which is seen as a logical expansion of establishing a public education system.

A recent study and account of "Adult Education in China" (Edited by Carman St John Hunter & Martha McKee Keehn, London: Croom Helm, 1985) describes a massive effort to educate the workforce in a formal and structured system. This study will be of special interest to those adult educators who provide in-service training, education at the work-place area and scientific and technical training for industrial workers or farmers. It is a highly structured system, as narrated, that parallels formal schooling, from primary level through university equivalency. Because the regular education system is unable to meet the needs of the economy for rapid modernisation, the adult education system is viewed as an essential supplement in terms of increasing the pool of trained workers.

For Pakistan the essence of the challenge is the same: How can population groups left behind or left out of the regular education system be brought into full participation in the development of a society? The Literacy and Mass Education Commission, Allama Iqbal Open University, Pakistan Television and Pakistan Broadcasting Corporation are already actively engaged in educating the masses, a step considered necessary for a society becoming a democracy of learners. But the fact remains that unless a formal, certificated and comprehensive scheme of adult education, national in scope and high in educational quality, is made part of the regular education system under the Ministry of Education, change in adult education will be negligible.

The book by Norman Evans, being visionary and controversial, is a valuable contribution to the academic literature on adult and continuing

education. It provides a watershed in the subject and is recommended as essential reading for all those who are involved with Adult and Continuing Education institutions in Pakistan. Other titles in the series include: curriculum Theory in Adult and Lifelong Education, by Colin Griffin; learning Liberation—Women's Response to Men's Education, by Jane Thompson; and Adult Education and Community Action: Adult Education and Popular Social Movements, by Tom Lovett, Chris Clarke and Avila Kilmurray.)

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RESEARCH NOTES

SOME OBSERVATIONS ON THE SCIENCE AND PRACTICE OF DAIRY-FARMING IN THE UNITED KINGDOM, PAKISTAN AND OTHER DEVELOPING COUNTRIES*

by

DAVID BETTS

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In opening his lecture, Mr. Betts drew some immediate comparisons between the situation in the UK and Pakistan through the following table:—

TABLE 1

Salient features of the dairy industries in the UK and Pakistan.

United Kingdom	Pakistan
1. Cow is main source. Goat minor but growing importance.	Buffalo main source. Cow is important. Sheep, goat, camel all contribute.
2. Produce more than we can consume in a static population — recently declined.	Production below desired level (541MR imported). Population increasing at 3% Demand at 7% p.a. Production at 2% p.a.
3. Bulk of milk from a single pure breed Fresian—Holstein Av yield 5000 L in 305 days.	Single breed of buffalo—Nili—Ravi —Several breeds of cattle and many cross-breeds Av yield 1500 L?
4. Widespread use of A.I.—farmers do their own—with progeny-tested semen.	Widespread use of natural mating. Often with poor untested bulls. A.I. available to 2% buffalos, 8% cows.

*A specially edited version by Dr. Fazal Mohammed, Assistant Professor, Department of Agricultural Sciences, AIOU, of a University lecture given by Mr. Betts during his ODA consultancy on dairy husbandry with the Department in July—August, 1984.

United Kingdom	Pakistan
5. Large herds. 64 av.—upto 300 or more.	Small herds except those of Government and Army.
6. Fewer milk producers 1970—100,000 1982— 52,000	Many milk producers—probably millions.
7. Dairying often the principal enterprise of the farm. Grass is a crop.	Usually a secondary enterprise, after crop production. Uses wastes.
8. Nationawide collection and distribution by Milk Marketing Board.	Negligible collection and distribution. Mostly home consumption and private sales on a small scale.
9. Very little milk produced in towns—usually illegal to keep livestock in urban areas.	81% of urban milk produced in or near towns. Only 19% from rural areas.
10. Highly mechanised, often computerised with stockmen well-trained (1, 2 or 3 year course or ATB short course). Well-paid and responsible for many high-value animals.	Negligible mechanisation. Labour intensive. Stock-keeping a menial untrained, often unskilled occupation. One man responsible for few low-value animals.

The over-production in UK, indicated in point 2 in Table 1, was partly stimulated by price incentives following Britain's joining the European Common Market, which operates a farm price structure to help the small-scale farmers of France, Italy and Germany. However, these prices are a huge incentive to the large producers of the United Kingdom, Netherlands and Denmark.

UK over-production was further illustrated in comparative terms:

TABLE 2

Bovine population, milk production and consumption

	United Kingdom	Pakistan
Average annual milk yield (Litre/bovine)	5000	620
Total milk production (in Million tonnes)	16.6	9.3
Human population (approx in Millions)	52	87
Locally produced milk*—		
Litres per person per year	319	107)**
Litres per person per day	0.9	0.3)

*for liquid consumption and manufacture (butter, ghee, yogurt, cheese, etc.

**supplemented by importation.

Mr. Betts said that many people in England are now questioning the whole validity of continuing to spend tax-payers' money on research and extension services simply to produce more of what there was too much of already. The National Institute for Research in Dairying at Reading University was involved in this controversial issue. The Institute carries out fundamental research on both the cow and and her milk. The Government now wishes NIRD to suspend work on the cow and concentrate instead on the use of milk and the development of more products from milk including glues and plastics. In situations where the supply of livestock feedstuffs is a major factor limiting milk production, it was important that the total amount of milk required for the nation should be produced by the fewest possible animals. Low yielders utilise a disproportionately high fraction of their feed intake simply to provide their daily requirement of protein and energy for maintenance.

Just like any adult person who is producing neither milk nor growth, a cow or buffalo needs a significant amount of feed each day just to maintain its weight and to sustain its body temperature and other functions, as illustrated by Table 3.

TABLE 3

Milk production potentialities and ration requirements of dairy animals in UK and Pakistan

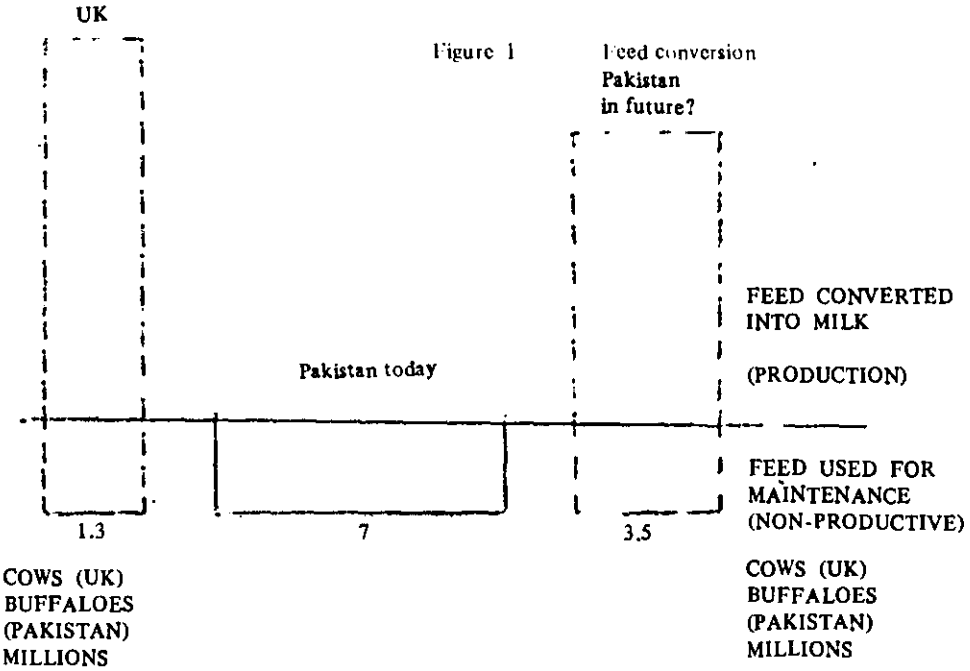
United Kingdom (5000 L)	Pakistan (1500 L)
Nearly all cows calve annually and complete a full 305 day lactation every year.	Each year 10 m buffalo give 71% of 9.3 m tonnes milk. = 6.6 m tonnes milk. ∴Each buffalo averages 600L.
To produce 6.6 m tonnes each year would take $\frac{6.6\text{ m}}{5}$ = 1.32 m cows	
Which would consume the same amount of nutrients to make the same amount of milk but only $\frac{1}{7}$ of the maintenance ration.	BUT they do not have a full lactation every year, often only every 2 years ∴Lactation yield is 660x2L=1320L

Note.—L = litres; m = million.

In other words, ten million buffaloes were maintained in Pakistan in order to produce 6.6 million tonnes of milk. In the United Kingdom this same volume of milk was produced by only 1.32 million cows.

The total amounts of feed energy and protein that were converted into milk in each of these cases would be very similar, but Pakistan has the additional burden of maintaining 8.66 million more animals to produce the same volume of milk. Stated another way, in the United Kingdom the same total amount of milk would be produced by 1/7 of the number of animals and they would consume only 1/7 as much total fodder for maintenance. Thus the fodder so saved (6/7) is used to feed more high-yielding animals.

In Figure 1 the area of the rectangles represents the total amount of fodder consumed by the animals.



In the UK the greater fraction is converted into milk. In Pakistan today most is used (by a much larger number of animals) just for maintenance. If tomorrow the yield potential of the animals in Pakistan could be raised then fewer would need to be kept. They in turn would enjoy a greater share of the available fodder, and the same total amount of fodder would produce much more milk (areas above the line).

Mr. Betts' view was that, although in Pakistan overall there appeared to be scope for more milk production in many areas there is little incentive to produce more because there is no fresh milk market accessible to every producer. Thus the dairy farmer has to convert his milk to butter and thence to ghee, which realises much less from a litre of milk than if he were able to sell it as whole milk.

The UK provides all dairy farmers with access to markets by arranging for a nationwide milk collection service run by a statutory body, the Milk Marketing Board. This body which has run for fifty years is the "mother and father" of the UK dairy industry. It would be unrealistic to

think of developing anything on the same scale here at this stage, but there is room to start on a pilot scale in areas surrounding major towns. Kenya does this under fairly difficult conditions in the semi-arid areas where Sahiwal cattle, whose forbears come from Pakistan, have done particularly well. There is a network of Rural Dairies, all based on the cooperative movement. These act as collection and cooling centres throughout the producing areas and concentrate delivery to the plants of the Kenya Cooperative Creameries.

Moving on from dairying itself, Mr. Betts made some observations on the broader area of the animal industry in Pakistan, in which there might be some scope for improvement.

First, the place of animal production in the agricultual system. This is using "agriculture" in its broadest sense, involving closely-knit systems which include people, animals, the soil, plants water, chemicals, money and equipment. It is also how the farmer sees it. However, there is at some levels a tendency for agriculture to be split into its many component parts, each looked after by a specialist. There may be some necessity for this, but somewhere, and at a fairly fundamental level there is a need for a farmer's friend and adviser who knows not everything about something but something about everything. Just as there are all-rounders in cricket, agriculture needs some allrounders too; people who understand the whole system.

This, he said, was related to the concept of universality in a university, which is embodied in Allama Iqbal Open University which includes the study of agriculture as a major part of its academic life. Throughout the rest of the university system of Pakistan agriculture has been exiled to separate campuses isolated from the mainstream of learning. This might not be good either for agriculture or the other universities, he thought.

Mr. Betts quoted from the Pakistan Agricultural Research Council publication 'The Agricultural Research System of Pakistan' which states: "A major emphasis in the National Agricultural Research Centre's research will be the Farming Systems approach where the production technology available for various agricultural commodities will be synthesized into an integrated system suitable for different agro-ecological regions and socio-economic groups. The objective of this research is the optimum utilisation of the available resources for improving agricultural production and to maximise farm incomes. Such research also helps in identifying the real problems — biological and economic — which are responsible for poor agricultural productivity, especially the cropping systems possible with the available

crop varieties. The National Agricultural Research Centre will organise Farming Systems research for selected agro-ecological zones in collaboration with the existing research institutions and develop research methodologies for use by other research institutions in the country."

He would also strongly recommend a systems approach, especially if coupled with the production of some agricultural all-rounders (who enjoy easy access to a range of specialists) to help the farmers at their own level. Animal production in Pakistan is only one part of the many activities of the farmer and his entire operation must be properly orchestrated for maximum effect.

Animal production was not simply a matter of disease prevention. Any touring cricket side or Olympic hockey team must have the services of a doctor to keep the team free from disease and to deal with their injuries, but the doctor cannot help them win matches. That is the function of the manager and captain, supported by the specialist services of the coach and the trainer. Similarly, animal production needs more than just disease prevention and control, important as those are.

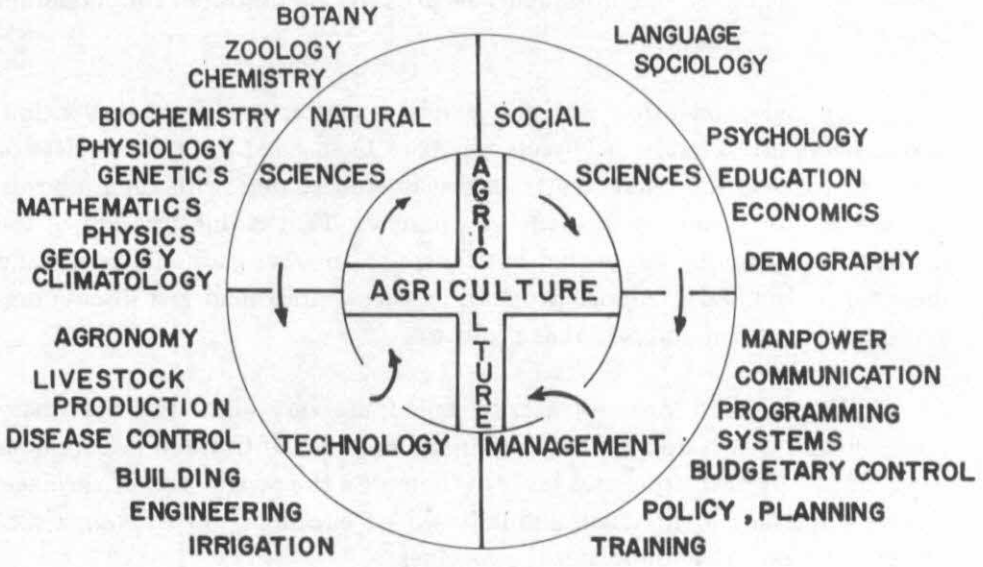
This he said was not a criticism of the very admirable veterinary profession in this country. The Veterinary Research Intitute in Lahore does work of the highest order and is very efficient in the production of vaccines. The veterinarians in the field similarly do an excellent job training a sub-professional cadre to administer the vaccines.

Animal health care, he went on, was very good, but more attention could perhaps be given to the areas of animal production, breeding and selection, fodder production and conservation, scientific rationing, environmental improvement, better milking practices and marketing systems. In the UK there are probably as many animal production scientists as veterinarians.

Mr. Betts' final point was concerned with the teaching of agriculture, which was an important part of the business of the AIOU. Academically, agriculture is a most fascinating composite of the natural and the social sciences, of the technologies based on these sciences and of the management of the systems powered by these technologies. This makes it a complex and interesting subject to study purely from an academic standpoint, aside from its practical virtues.

He used Figure 2 to try to illustrate both the inter-relationships and the diversity of subject areas and activities directly or indirectly involved in agriculture. It shows not only the servicing needs of agriculture, but also its richness as a focus for study.

Figure 2



At a more basic level he suggested agriculture could provide a very relevant backcloth for the teaching of the natural and social sciences in schools. And in a country where agriculture was still the principal industry and the main occupation of its people it would be fitting for it to provide the background to all basic science teaching. Basic science could be taught in an interesting, imaginative and purposeful way so that the very best brains will be attracted to serve agriculture, the nation's most important industry. Those who are not so attracted would at least enjoy a much better understanding and appreciation of agriculture that would be useful to them in whatever else they chose to do in life.

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A STUDY OF THE ROLE OF EDUCATION IN RURAL DEVELOPMENT*

by

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Introduction

Pakistan is a rural country. About 74 per cent of the people belong to rural areas. They are poor and illiterate and depend upon subsistence farming. *Per capita* income is very low. About 32.0 per cent of the people are below the extreme poverty line. They have either very small holdings or are landless workers. Most of the land is owned by big landlords. They have caused the failure of the land reforms and the pattern of landownership has not substantially changed. Poor tenants, sharecroppers and farm-labourers have always been deprived of education by the landowners to get free labour. A dual system of education has been operative in the country to facilitate the elite and to debar the poor. A great disparity exists between the literacy rate of the rural areas and the urban population. The population in Pakistan has been growing rapidly. As most of the population belongs to the rural areas, this sector has been the most affected in that the density of population per square mile and per hectare of cultivated land has increased, resulting in an abundant supply of labour which is not productive in the prevalent circumstances of this country. In the absence of any programme of education and training this has detered the pace of progress. Wherever this labour is used, on account of the low level of education and illiteracy, its performance has remained very poor and deficient. The absorptive capacity of agriculture is very low and surplus labour has not encouraged the farm owners to increase production. Poverty, unemployment and insecurity caused by feuds and quarrels, have pushed the poor rural population to the urban areas. The migrating people have neither skills, nor training to perform non-farm jobs and the industrial sector is not great enough to absorb these people. In this way rural illiteracy has penetrated into urban life with its undesirable effects.

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*(The study was submitted in partial fulfilment of the requirements for the Doctor of Philosophy Degree in Education in the Institute of Education and Research, Punjab University. The writer feels highly indebted to the kind guidance of the Director of the Project, Dr. Mrs. Zubaida Zafar Omer).

In spite of huge investment in agriculture, food self-sufficiency is still to be achieved. If one crop gives comparatively better production, it is counterbalanced by a large deficit in some other. There is no improvement in per acre yield. Production is increased only by increasing the area under cultivation. Rural life is conservative. People have not been able to overcome their superstitious beliefs. They lack adaptability, ambition and readiness for change. They feel a general contempt for manual work. Standards of living are very low with insufficient food and the worst housing conditions.

To change rural life, a programme of rural transformation was launched in 1953. It was based on the principles of community development on a self-help basis and called Village Aid. To utilize surplus rural manpower, A Rural Works Programme was introduced in 1961. It was financed by the United States of America. The education of rural people was a part of the programme, but more than 80 per cent of the funds were spent on the construction of link roads and the rest was distributed among health and sanitation, social welfare, irrigation, industries, education and the purchase of machinery. Education received only 2 per cent of the total allocation.

At present the Integrated Rural Development Programme is in vogue, which theoretically emphasizes synchronization of development operations. First importance has been given to agriculture, considering it the base for future rural development. The programme is organized at five levels, but the most important is the markaz (centre) which serves 50 to 60 villages or primary units. It is the hub of the programme activities including banking, credit facilities, machinery workshops, storage, marketing, agro-based industries, health, education and recreation. A long list of objectives of the programme was drawn up, covering almost all the aspects of social life. But the programme could not be expanded after 1973-74 as the concept and the requisite institutional frame-work for rural development were not clear to the government. Farm cooperatives, Agro villas, rural credit schemes and a Pass Book system were introduced as the complements to IRDP and were meant to meet the credit requirements of the farm owners. The aims and objectives of this programme are quite high sounding but in practice the stress was on agricultural development. It has been considered almost synonymous to rural development which is a great deal more than increased farm output. Increased farm production cannot improve rural society if it is not supplemented with education and training of the rural people. The benefits of the developmental programmes are usurped by the big land-owners and the illiterate and poor masses are always deprived.

Increased farm mechanization encouraged by the IRDP progressively robbed the ever-increasing labour force of the meagre livelihood available in the rural areas. As the basic requirements of development have not been met, high price incentives, subsidies and huge loans granted to the landowners have not been proved productive enough. In relation to investment in agriculture and other rural development programmes the returns in the form of income or employment have been trivial.

I felt that the traditional village could not be transformed by programmes of a transitory nature without first changing villagers through the process of education. I wished to confirm this idea and therefore the study was designed to appraise the effects of education on economic, social and political life of the rural communities.

The objectives were :

1. To provide a rationale that education provides a base and contributes towards rural development.

2. To examine the role of education as it is related to the objectives of rural development in its social, economic and political and organizational aspects.

3. To describe the existing situation in the two villages of the case study area in social, economic, political and organizational aspects as affected by the provision and non-provision of education.

4. To compare the existing situation of the two villages.

Related Literature

The need for rural development programmes was realized after the 40's when most of the Asian and African countries achieved independence and let the world know their misery. Increased health measures enlarged the span of life. As there was not a similar decrease in the birth rate, it accelerated the rate of population growth. The available resources of these countries were not sufficient to feed the growing mouths who mostly belonged to the rural areas. Agencies like the World Bank, International Development Agency, Food and Agriculture Organization started assistance programmes.

A new type of literature came out suggesting means and ways for the development of less-developed countries. Gunnar Myrdal (1968), Barbara Ward (1962), Brannon and Jessee (1977), Ray Viker (1975), John Scott (1969), Nigel Hey (1971), O.L. Freeman (1968), W. Cockrane (1969), Hung-Chao Tai (1972), Robert M. Solow (1957) and many others studied the process of rural development and presented their own points of view to change the traditional rural societies. Harbison and Myres (1965) stressed the need of human resource development through education for the general progress of a country. T.W. Schultz (1967) emphasized schooling to transform traditional agriculture. It was education of the farm people which counted most for increasing farm productivity in Japan, Israel and the United States.

Popular strategies for rural development failed in the absence of education. Such revolutionary approaches as land reforms could not change the centuries old rural social structure. After an extensive study of land reforms in eight countries of Asia, Africa and Latin America, Hung-Chau Tai (1972) concluded that there was no possibility of increasing production by adopting these programmes. According to him, the main obstacle in the way of implementation was the dis-interest of the landed class and its unwillingness to sacrifice its own interest for the benefit of the peasantry. Saad M. Gadalla (1962) commenting upon the land reforms in Egypt wrote that the present results of land reforms would not raise the living standard of farm people. The situation in the South East Asian countries was also the same. Gunnar Myrdal (1968) remarked that the land reforms could not bring any revolutionary changes in the inequalities of village structure and did not produce any favourable economic results. Jacoby (1971) wrote of the failure of these programmes in the Philippines and Korea. He commented that they did not prove useful for the growth of small farmers and the community leadership was still in the hands of former landlords.

Land tenure acts were promulgated to protect the rights of tenants against the oppressive land owners. As the tenants were illiterate, they failed to safeguard their legal rights. Studies of tenancy laws in Brazil, Ghana (Jacoby 1971), India, Pakistan, Malaya and other South Asian countries (Myrdal 1968) bring to light the fact that these laws did not impove the situation but contrarily worsened it. Credit cooperatives, introduced to meet the immediate economic needs of the lower strata of rural populations, also failed as the big land owners and moneylenders usurped all the advantages of this scheme and made it impossible for the poor people to get even a small loan. The All-India Rural Credit Survey 1951-52, Muzaffar Hussain and

Abdur Rashid's study (1976) in Pakistan, Gadalla's study in Egypt (1962), Yu and Lee's study in Taiwan, Vyas's in India, Rashtia Bank's in Nepal, Williams in West Malaysia and Mahmood Hasan Khan's in Pakistan. Brannon and Jessee (1977) support these views.

The purpose of cooperative farming was to minimize effort and to maximize output. In India it was also intended to eliminate class distinction by giving equal rights to all the participants of the scheme. Tanzania, Peru (Norman Long 1977), India (K.M. Chaudhry 1963) and many other third world countries followed the example with high sounding claims. But in actual practice, as the studies reveal, the petty land owner became a wage labourer of the farm (Myrdal 1968).

Soil and water provide the base for agriculture. There is no possibility of any type of growth without water. But just like all other means of production, the water resources are used exclusively by the big land owners. T.S. Epstein's study (1962) of Wangala shows that the provision of irrigation facilities increased production but it did not result in any reallocation of resources. The change was unilinear and all the other aspects of social life remained the same. The economic growth produced by irrigation could not give birth to a market economy. Even the entrepreneur character could not emerge. When she revisited her area, T.P. Epstein found that the situation had possibly worsened and the large landowners had entrenched themselves even more effectively in the economic system. Improved irrigation facilities are used simply as a type of refuge if monsoons fail. They landlords and villagers alike have not developed attitudes to the use of a perennial supply of water to increase production (Jacoby 1971), (Myrdal 1968) or to shift themselves to double cropping (Myrdal, 1968).

Mechanization includes all mechanical devices which replace labour and other traditional means of farming and help to accelerate the speed of work. No doubt it saves times and make double cropping possible. In third world countries, where rapid population growth and acute shortage of employment opportunities have already created problems, mechanization simply makes the unemployment problem worse. Brannon and Jessee (1977) have referred to the studies of Mcinerney and Donaldson in Pakistan, Singh and Singh in India and Amberchrombie in Columbia which show 8 to 65 per cent reduction in the use of labour force by tractorization. A study by Hiromitsu Kaneda (1969) indicates that the use of tractors can increase intensity of cropping, but there is no possibility of increasing yield per acre per crop as compared to animal draft power.

However, the use of new technology has become imperative to increase agricultural output. The traditional means of production are no longer efficient to meet the needs of expanding population. But the adoption of new technology requires innovative behaviour which is almost absent among the traditional peasants of developing countries. It is the educated big landowners who are more inclined towards the adoption of these new techniques. The existing inequalities widen with the increased modernization of agriculture (Laurence Hewes 1974). A study by V.S. Vyas (1968) indicates that the main indicator for the lack of investment in new factors of development on small farms is the level of literacy. Another study of the same area (V.S. Vyas et al 1968) reports that the younger and dedicated farmers of higher castes with large holdings and money resources gained the most from the use of new techniques. Farmers with small holdings and little liquid capital could not obtain good results and in the end ceased to participate in innovative programmes. Klausen's (1968) study 'Kerala Fishermen' shows a marked difference in response to new fishing techniques between the two fishing communities—one educated and the other illiterate.

Price incentives and market mechanisms affect the decision making process of persons caught in the vicious circle of subsistence farming. A study by Syed Mushtaq Hussain (1969) indicates that market prices have no effect on production decisions. Hexem (1971) has referred to the study of Mathur and Ezekiel which bears the same findings. As he explains, the subsistence farmers and the landless workers who market to their debtors are not affected by these policies. According to him they have no direct influence on the efficiency of production techniques.

Education is not the basic ingredient for increasing land productivity, but it is an important tool in order for the user to understand techniques, to know skills and to be motivated for more production. Education is the only tool through which the ever-expanding knowledge of today's world can be transmitted. Education precedes economic development. The higher rate of literacy of the developed countries was the main cause of their economic independence. The real revolution in a country begins with the establishment of an education system. Education and training of the people contribute directly to national development. Studies by Adam Curle (1966) and Harbison and Myres (1968) indicate that there was a close relationship between a country's attitude towards the education of its people and the rate of its development. They also report that the development of a country

is the result of human effort and not the outcome of accumulated resources. Studies by Herman P. Miller (1962), W. Lee Hansen (1971) and White and Duker (1973) show marked differences in earnings with different levels of education. Weisbrod (1964) and Connel and Dasgupta (1976) consider education a marketable commodity. Their studies show a close relationship between education and employment and occupations. A study by Rogers (1958) shows that in general, education, status, and the number of contacts with others and with government agencies are positively associated with early adoption of an innovation. Comparative studies of agricultural production reveal the fact that farms with educated and skilled operators were producing more than their counterparts with illiterate and unskilled operators (Abdul Saleem 1978). Several comparisons of this kind have been made by T.W. Schultz (1967). Gaddala's study (1962) shows the high correlation of education with net farm income, clothing, health attitudes, children in schools, size of the family, birth control and attitude toward education of girls. In this way education provides a base for all future development. As long as illiteracy is not eradicated, there can be no hope of stable development in the country. Planning for rural transformation without first changing the rural people through the process of education will remain an unrealized dream.

Methods and procedures in the Study

Two villages Bughlani and Kalari in Taunsa subdivision of District Dera Ghazi Khan were selected as samples. This selection was made on the basis of the cultural and geographical similarities of the two areas, keeping education as an independent variable, as it was provided in sample 'A' but there was no school in area 'B'. The areas under study were rainfed. There was an acute shortage of water.

The main source of data was the information provided by the representative of each family of the case study area. Banks and dispensaries did not exist in the area. The school enrolment record was the other source of data. I also recorded my own observations about the living conditions of the people. The main tool of research was a structured interview. An observation sheet was used to record observations.

The data was collected through interviews with the representative of each family of the area under study, during July and August 1979. On the whole 260 interviews were taken; 170 of them took place in Bughlani (sample 'A') and 90 in Kalari (Sample 'B').

The interview schedule had fifteen sections covering almost all necessary information about income, family members' education and occupations, saving habits, attitude toward economic development, traditions, use of mass-media, preferences for a leader and criteria for prestige and status.

Generally percentage statistic was used. But where it seemed necessary mean was also applied. For correlation tetrachoric "r" and contingency coefficient "c" were computed.

Major Findings and conclusions

The analysis of the data confirms the hypotheses of the study that development relates to the educational facilities/opportunities available to the local population. The data suggest that generally economic well-being relates to education. Educated families have higher income, more earning members and less small-age children. They are more eager to educate their off-spring, and enjoy better participation of female partners in economic activities. They do not stick to agriculture if it is not productive enough but adopt other occupations to have sufficient for the family. Therefore educated people have more diversified jobs.

Educated people are comparatively more against old traditions. They also take necessary measures for health and hygiene. System of payment, which is an established indicator of development, changes with education. In this study the educated people made payment to all kinds of hired labour in cash. It was true in the highly educated group, while the other groups also preferred payment in cash but the payment in kind also existed. Educated people have better crops and they often sell their surplus in the open market. With this surplus income they are not hesitant to do part-time work for supplementing their income. They are continuously busy in boosting up their harvest. They grow a vast variety of crops both food and cash, while the illiterate people are contented with only one combination and that too of food and fodder only.

Conclusions

As there is a large scale impact of education on the total life of the people, therefore one can conclude that education is a pre-requisite for transforming the rural social and economic life. Although not attractive at

present, it can be made peaceful and worth-living by providing universal education, at least, upto secondary level, as low education hardly brings any change in attitudes, habits, modes of living, and person to person relations.

Education develops innovative behaviour and brings change in societies. Traditional societies can be transformed only by providing good education. All modern developmental concepts of forming nuclear families, using mass media for both education and recreation, giving good education to the new generation, developing friendly and cordial relations and cooperation with each other emerge out of the education of the citizens.

If a country desires economic independence it will have to invest more in the education of the masses as it develops the habits of thrift and saving and encourages people to work for more and better production.

A good society and a better social order can be created by giving people good education as only an educated society can create a good democratic government by selecting educated social workers as their representatives. Also only educated people can create an educated society as the demand for education increases in the educated families. In illiterate societies the educational institutions always remain under-utilized.

Recommendations

- Provision of education, to every member of rural society, at least upto 8 years should be made the first step of rural transformation.

- To achieve No. 1, without any further delay, education should be made compulsory from age 5 to 12 in the rural areas where the problem of seats and staff does not exist and in many schools, the number of teachers is greater than the number of students.

- Adults education centres should be established. They should be made effective and really functioning.

- Poor sections of rural society should be encouraged by raising loan limits for them equal to a landowner of 25 acres. This facility should be extended to them by mortgaging the machinery they pruchase.

- Rural schools should be made more attractive and comfortable for rural children.

- More wise, accurate, and honest use of funds allocated for the education of rural children.
- More wise, accurate, and honest use of funds allocated for the education of rural areas should be ensured.
- Master plans should be prepared for the development of rural areas.
- Installation of new industrial units in congested urban areas should be discouraged. Industrialists should be advised to choose raw material producing areas for this purpose.

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DATA BANK

STATISTICAL GLIMPSES

OF

ALLAMA IQBAL OPEN UNIVERSITY

Established	1974	
Enrolment	Upto April, 1985	4,34,842
Courses	Upto April, 1985	75

Fields of Study

		Full Credit	Half Credit	Total
1. General Education:				
(i)	Intermediate	10	8	18
(ii)	B.A.	15	7	22
(iii)	M.A. Educational Planning and Management	9	—	9
2. Teacher Education:				
(i)	Primary Teachers Orientation Course (PTOC)	1	—	1
(ii)	Primary Teacher Certificate (PTC)	1	—	1
(iii)	Certificate of Teaching (CT)	—	5	5
(iv)	Arabic Teachers Orientation Course (ATOC)	—	1	1
(v)	English Language Teaching (ELT)	2	—	2
3. Functional (Credit Courses:				
(i)	English Typing/ Shorthand	—	4	4
(ii)	Urdu Typing/Shorthand	—	4	4

	4. Functional (Non-Credit Courses):				
	(i)	Agricultural Courses	—	—	6
	(ii)	Elementary Arabic	—	—	1
	(iii)	Daftri Urdu for Federal Government Officers	—	—	1
Media Support	(i)	Radio programmes presented upto April, 1985			3,876
	(ii)	T.V. Programmes presented upto April, 1985			666
Regional Services	(i)	Regional Offices			11
	(ii)	Sub-Regional Offices			3
	(iii)	Study Centres			250
	(iv)	Correspondence tutor	average 35 students per tutor		
	(v)	Study Centres	average 35 students per tutor		

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