

Quality Education in Rural Areas of Pakistan: The Role of Allama Iqbal Open University (AIOU)

SARFRAZ ASLAM

(correspondence author)

Faculty of Education, Northeast Normal University
Changchun City, Jilin Province, China

Prof. CONGMAN RAO

Director & Professor

Institute of International and Comparative Education
Faculty of Education, Northeast Normal University
Changchun City, Jilin Province, China

Abstract:

The development and survival of any state depends upon education. Informal education goes hand in hand with formal education to take part in a detrimental role in the establishment of a society. AIOU (Allama Iqbal Open University Pakistan) took its root in 1974 to initiate a distance learning system to serve the peoples without any discrimination of gender, religion and locality. The rural sites of the country started to get benefit from the educational programs of the AIOU. The study was aimed to assess the role of AIOU (Allama Iqbal Open University) in two dimensions, to provide quality education in rural areas, actual role of AIOU for quality education improvement in Pakistan. The study was qualitative in nature and conducted among 10-rural distance tutors of AIOU in district Okara, Pakistan. 10 interviews were conducted for the data collection after that the data were analyzed through coding and the thematic process, to find out more sophisticated results noteworthy analysis of in hand literature was also surpasses out. In all aspects of the school and its adjoining education society, the privileges of the intact child, and all children, to endurance, security, growth and involvement are major point of focus. This brings to understanding that the spotlight is on learning which reinforce the potential of children to act positively. On their own

possession and all the way through the attainment of applicable information, practical ability and suitable approaches; those generated for children, and help them to produce for themselves and others, shelter places, security and healthy interaction (Bernard, 1999). On the basis of deeper and critical investigation, the study found that the AIOU beyond all doubts devoted with the commendable body of accountability and is a platform to provide equal chances for all without any discrimination. Quality assessment system, non political interference, quality curriculum and teachers motivation makes AIOU an organized system striving for achieving quality oriented goals. AIOU is playing a vital role in rural education for sustainable development in Pakistan.

Key words: AIOU, rural education, education development, quality education, quality assessment

INTRODUCTION

Education has been verified as most efficient short cut for developing and bringing up the human resource base of most nations and could show ignition in speeding up the pace of development of nations. In order to improve and prepare more qualified and non- qualified in the field of education, the notion of rural distance education has become an eye catching concern globally.

Globally, education has been witnessed as a catalyst for accelerate the social transformation of a society along with assets establishment, and nationwide growth. In this scenario, both developed and developing countries are investing more in the field of education.

Access to educational opportunities for all is a major challenge facing many countries. It is noteworthy that many countries are starting to appreciate the role of distance education in educational development of their economies particularly in alleviating poverty. This is so because education is seen as a means of empowering an individual to effectively

and efficiently perform in the society and hence raise his or her standard of living. Distance education, no doubt is one of the means to increase and broaden access to education. Education always plays a critical role for the prosperity of a nation.

Distance education (DE) as a harmonizing mean of delivery was put in forward steps to give direction to efforts to beat the prevailing confronts of door step access, impartiality, cost-effectiveness, and quality for higher education (Perraton, 2000). Distance Education is an effective way of education for all those education seekers who are at long distance and in this system of education the education seeker and its deliverer both are well estranged from each other. And here the term Distance means geological, time and even scholarly distance. Distance education is a strongly organized activity and has strong setting up.

Education is measured as one of the milestone of any civilization (Adams, 1998). It is conventional reality that its only the education that make s the world to move forward to conquer the world and be prosperous and its only possible by establishing a strong education up (Ball, 1990). Education helps a society and its members to be familiars of new world with the challenges and with the ways to compete these by generating novelty and creativity in their ideas. Only with developed education system nations develop sense of capability to lead the world (American Federation of Teachers, 2000). Education is the key factor of advancement which needed to be addressed on administrative and non- administrative grounds.

On the basis of prevailing statistics from developed and under-developed countries it is suggested that literacy rates are relatively low in all poor countries. As Pakistan also is one of the countries that are striving for development but in-spite of all efforts and misfortunately Pakistan government never put preferable efforts to make improvement in this field. This neglect way of governance create a lot of hazards for providing education on every ground; for this reason private sector come

in front in past few decades to full fill the need of quality education. However, private sector education system is mainly based on self benefits in form of profit rather than on quality education so, note worthy number of students in Pakistan are effected of having no or low access to quality private and government education.

Distance learning is an achievement of awareness and abilities by interceded training and teaching, around all kind of technologies and other types of learning at a distance (Roblyer & Edwards, 2000). According to Newby, Stepich, Lehman and Russell (2000) distance learning is "an organized and well designed type of learning process in which teacher and learners are physically separated."

Education has proven to be an effective way of mounting the human reserve foundation of most nations, and possibly will press on the advancement of realm (Arko-Boham, 2001). George and Singh (2000) maintained that nations with bountiful resources without high literacy rates are not developed while those with little natural resource but higher literacy rate are developed and enjoy a high standard of living. Education is a catalyst for eradicating socially undesirable behavior, which does not only make the life of people unbearable but also increases government expenditure that could have otherwise been used to enhance national development (Baum & Payea, 2005a). Thus, education is the engine of national growth through the development of human capital and that it provides the requisite information, expertise and attitude those are required to refine the human resource to be more productive in their respective endeavor.

Distance education is the managerial scaffold and a procedure of providing coaching at a distance. Distance education happen between a teacher and student(s) those are physically far away from each but still connected by using the bridge of technology to vanish all the gaps (Willis, 1992, p. 104).

It can also be suggestive way that, distance education is a deliberate learning practice or system of instruction exemplified by quasi-permanent partition of the trainer and pupil. Through distance mode of education, information and communication are swap all the way through printing or electronic interactions media (Keegan, 1980)

Distance education provides a broad spectrum of approaches to characterize a high degree of deviation. Such variation may comprises of medium of technology by using print, radio and computer; the character of the learning mode such as attending a workshop, seminar, degree program, supplement to traditional classroom and levels of support; institutional settings; topics addressed; and levels of interactivity support (face-to-face, online, blended, none) (Fillip, 2001).

The Allama Iqbal Open University took its bases in May, 1974, with the focal objectives of not only giving education to huge amount of mass but also to facilitate the learners by giving opportunity at their door step especially addressing to those who are not in a condition to leave their homes and jobs. With all the passing years, the University has tried hard to achieve their goal by more than accomplishing its promise. It gave a beam of ray for the working class of people and to the females on their door steps. It has also completely revolutionized his work in the field of Mass Education. It is now breaking new grounds in the fields of professional, scientific, and technical education. It is an attempt to even reach to the farthest regions of Pakistan. It is also attempting to strap up modern information Technology for distribution of education in Pakistan.

As these past years of AIOU have proved Distance mode of Education has opened up new horizon for millions of people, especially women, rural peoples and above all it also appendage the hard work of the federal and provincial governments , without being troublesome on their possessions.

The idea of Distance Education has gained warm acceptance in Pakistan because of the major aspect of poverty and relative dispossession of women. The poverty rate in the rural areas of Pakistan is much higher, where official education system is much less established as compared to the well developed cities. The literacy rate and education is greatly poorer for females in Pakistan, predominantly in the countryside areas, due to shortage of sources and old-fashioned civilization.

The idea of an "open university" come into existence with the articulation of wide principles in the Education Policy of 1972-80, in these words: "Open Universities are being used in several countries to provide education and training to people who cannot leave their homes and jobs for full time studies. An open university will, therefore, be established to provide part-time educational facilities through correspondence courses, tutorials, seminars, workshops, laboratories, television and radio broadcasts and other mass communication media...."(Govt of Pakistan, 2009)

Since Allama Iqbal Open University came into being it has been serving and escalating its educational and teaching conveniences to assist job engage people and females to broaden their specialties and occupational skills. Main characteristics of AIOU may be depicted as following (AIOU, 2016):

- Two Operating semesters are offered in each year one in spring and other in autumn.
- Highest enrolment rate with an average of 1.2 million per year student
- More than 2000 courses being offered.
- Serving in 9 regional campuses, 33 regional centers, 41 approved study centers (for face-to-face programs) and 138 part-time regional synchronized offices.
- 1172 Study Centers are conventional all over the Pakistan.
- The biggest printing home in Pakistan publishing over 1.8 million books per year.

- The largest Teacher Education association in Pakistan having estimated enrolment rate of 400,000 Students every year
- Establishment of Resource Centre for Basic Functional Education (mainly for illiterates), Literacy and Post Literacy materials.
- To expand number of qualified teachers and also to boost up research potential in teaching and other research associations Master's, M.Phil and Ph.D. programs has been introduced .
- Institute of Educational Technology (IET) having domestic services for construction of TV, Radio and non-broadcast programs has been developed.
- More than 70 percent students obtained employment.
- 50 percent of total enrolment are females
- **The rural-urban allocation of the student's 58% and 42% in respective order.**
- No age boundary for enrolment in any University programs.
- A student can carry on at his personal tempo from semester to semester.
- In current situation a large number of consumers are in SSC, Intermediate, Bachelor and Teacher Education programs.
- Receive UNESCO NOMA award and Raja Roy Sing award for inventive approaches for reporting literacy to the rural masses (AIOU, 2016)

Statement of the Problem

Pakistan came into being in 1947 with verse circumstances, so the problems of quality education was not unexpected for Pakistan as such kind of issues comes with beginning of the any new born state. Pakistan got British system of education in inheritance. Although this system was well defined but still system was not adequate to accommodate the desires of

communities and was defectively differentiated. As the system was not reformed and up to dated according to the demands and social values of the people (Sheikh and Rasool, 1998). Because of lack interest of government of Pakistan towards this agenda even after 69 years of came in to being, Pakistan still have the lowest literacy rate in the world. Pakistan is still confronting a situation of education disasters whereas till the day 25 million children not able to reward their legitimate right of a valuable education without any discrimination in education. The aim of this study is to make a successful effort to investigate the contribution of AIOU in providing quality education of Pakistan specifically for far flung areas.

In way to offer contact to a quality education for all people living in rural areas of Pakistan, especially discouraged, insolvent and orphans devoid of prejudice beside any shade, faith, masculinity, assemblage or group. AIOU looking for to upgrade this circumstances by attractive its amenities to educate people from rural areas, communities living on the borders, far away from center, paying attention on girls' education and civilizing education excellence by competence building and training of teachers. This study tried to investigate the real input of AIOU for providing eminence education in Pakistan.

Objective of the study

The main aim of this study was to examine the role of AIOU to provide quality education in Pakistan.

Research question

According to Rural Distance Tutors, what are the basic reasons that AIOU considered as quality education provider for rural areas in Pakistan?

Distance Education in Pakistan

Pakistan like many other South Asian countries started its distance education program to present mass education and literacy to the people living away from educational sources by giving them opportunities on their door step just to facilitate their earning. Over period of time programs of distance education became more developed to cop up to the requirements of those who for a range of rationales were not able to be there for formal organizations or for those who require flexibility in time and duration according to their pace in their education. The Allama Iqbal Open University set up in 1974 was the first Open University who begins to do work in Asia. Although after this was followed by the establishment of the Virtual University in the year 2000 recently. Distance education is now passing through again the stages of evolution to go hand in hand and to overcome the growing needs of new era with advancement in with the in the field of information and communications technologies and to upgrade the strategies of learning, which could help the distance education model to beat the most responsive to the changing educational challenges.

Higher Education Commission: Distance Education

The Higher Education Commission has adopted various initiatives to provide hold up the Distance Education institution as well as other educational institutes, which include a constituent of distance learning. These initiatives are pointed out as follows:

Online Lecturing and Net-Meeting using IP-Based Video Conferencing System

To compensate the need and lack of faculty members and to perk up the in general quality of education, HEC started the “Online Lecturing and Net-Meeting using IP-based Video Conferencing System.” Under this project, HEC make available

video conferencing amenities to universities/degree giving institutions across Pakistan.

Broadband Facility

In 2007, HEC took a contract with a MoU in Pakistan Telecommunication Company Limited (PTCL) whereby PTCL will supply Broadband DSL connections to students, faculty members, and administrative staff at support financially charges at their dwellings.

The Role of AIOU as Quality Education Provider

Table1: Delivery Model at Allama Iqbal Open University – Pakistan

<p>Model A—Regional Study Center Student</p>	<p>Used where the class size is small and study interior have been recognized in the confined area</p>	<ul style="list-style-type: none"> • Each study center is well prepared with high speed Internet connectivity, laboratories and taught faculty • Developed multimedia courseware is tributary in centers. • Each student also has an online entrée to the main campus server or regional server for supplementary open self learning conferences • However students are not permissible to take part in online conferences as they have been granted teaching hold up at the center
<p>Model B—Internet-Based Student</p>	<p>Intended at students who have way in to the Internet at home or at the office.</p>	<ul style="list-style-type: none"> • Internet is used for online obligation compliance, supplementary online lecture meetings and live sessions with teachers • Multimedia lessons are to be had to students online. • Students can access already documented video conference lectures.
<p>Model C—Girl at Home</p>	<p>Aimed at students who do not have access to the Internet</p>	<ul style="list-style-type: none"> • Students are provided with self learning multimedia courseware on CD's and other orientation materials at their home. • Students can use the Internet amenities obtainable at either the main campus, study centers or Internet Café's to submit coursework.

Source: Sangi (2005). "Engineering Quality Learning through ICT: An AIOU Model for Online Education and Research"

Quality Education

In 2002 Education Department of US has define the standards of quality of education by providing its national educational goals and objectives. And provided objectives can be categorized generally into following three classes: Social Excellence, National Excellence, and Academic Excellence. Quality decides the extent to which and how students learn and also determine the level by which their educational opportunities translates them to get a personal, social and developmental benefits.

While on the other hand Goal 6 of the Dakar Framework for Action (2000) highlights the necessity of a motivated pedagogy. According to this goal, it's the schooling and erudition procedure that brings the prospectus to life and also defines about happenings in the classroom that is followed by the excellence of the learning product. Only the system with objective of excellence in education consent to children to become better and grow in school environment, that is encouraging and also provide difficulties, which help them to become positive, have good self-worth and enthusiastic to struggle ahead thus far at the same time feel a sense of accountability towards others in their community. We believe and strive for such kind of schools and set ups where our children with different abilities and potential can be progressive in their abilities, can learn and nurture together.

Indicators for Quality Education

Table2: Indicators for Quality Education

Educational Inputs	Educational Processes	Educational Outputs	Quality Assessment
Financial Procedures	Curriculum development	Level of Knowledge	Management, Faculty & Staff quality
Physical procedures	Teaching & Learning	Skills	Students' quality
Manpower procedures	Final Assessment	Values	Accountability quality

(Murnane 1987, Massey 1992)

Comprehensive Strategy of AIOU for Quality Education

Teaching Learning Process

AIOU follows a comprehensive strategy to give access for learning and then maintaining quality of education. AIOU has 9 regional campuses, 33 regional centers, 41 approved study centers (for face-to-face programs) and 138 part-time regional coordinating offices. 1172 Study Centers are established throughout Pakistan. Now days, for specialized and technological courses, the notion of study centers especially for practical and realistic teaching has been used widely. While conventional ways of training such as communication with far distance teachers and contact with the corresponding tutor for guidelines has been complement by radio and television programs.

In this regards most importantly, the Satellite and Internet have transfigured the structure of Distance Education. In a way, for the student's guides and convenience, all around the country, well qualified teachers and experts from their specialized field have appointed to guide during the semester, with the concerned region. Students have to present two or four assignments to the tutors as per timetable who appraise them, proceeds back to the students with his constructive remarks. It is a student presentation evidence and manner of criticism for the student. Assignments made an obligatory element of final estimation of student. Practical teaching for some courses is prearranged at the study institutes to develop compulsory dexterity. The Final Examination is given on the model of public question paper for each course at the end of semester. The weightage of assignment marks are 30%. The Final Examination counts 70%, while the cumulative have need of to pass course, in general by 40% of except where specify (AIOU, 2016)

Maintaining Quality Education

In order to provide and keep hold of excellence of education, the AIOU mainly spotlight on the free education for Special (impaired) students and generally university charge low cost comparatively to other public and private universities. AIOU provide an enabling environment to nourishing the natural talents, aptitudes and abilities of all students for a lifelong learning and education through innovative curriculum and teaching methodologies, standardized teachers training, professional and vocational skills advancement and a holistic human development. For the strong monitoring and evaluation, directorate of quality enhancement is responsible. This department works on quality enhancement.

Study Center Development Components

Once study centre is up and running, AIOU continuously strives to maintain their sustainability while increasing capacity and access. In that way centre remains committed to achieve the teacher training. AIOU never loses focus of this important pillar and organizes regular teacher training programs to make them well versed with the contemporary teaching practices. The concept of a school remains incomplete without a proper building. AIOU puts special emphasis on this issue as well as low cost, so public schools, colleges are used as study centers.

Programs Offered by AIOU

Table3: Programs Offered by AIOU

Sr#	Level/Program	Categ ories	Area of service
1	STEPS/Certificate Course	12	Throughout Pakistan
2	Secondary School Certificate	2	Throughout Pakistan
3	Higher Secondary School Certificate	3	Throughout Pakistan
4	Bachelor	18	Throughout Pakistan (Only few science programs on specific places)
5	B.Ed (Teacher Education)	4	Throughout Pakistan
6	Post Graduate Diploma	11	Throughout Pakistan

7	Masters	44	Throughout Pakistan (Only few science programs on specific places)
8	M.Phil/M.S	25	Throughout Pakistan (Only few science programs on specific places)
9	PhD	18	Throughout Pakistan (Only few science programs on specific places)
Total		137	

Source :(www.aiou.edu.pk)

Research Method

Participants and context of the study

Teachers are the most important part of any education system; therefore, the target respondents for the mentioned study were rural distance tutors of AIU in district Okara, Punjab province, Pakistan. These tutors serve as part time faculty in AIU, most of them are also employed in secondary, higher secondary, college and university level. Purposive sampling was used because only that teacher was considered fit for the study that was rural based service provider. Ten (10) distance tutors (3 females, 7 male) agreed to be interviewed in detail whose interviews were then recorded in researcher's personal cell phone by their permission. The demographic information of respondents is shown in Table below.

Demographic Information of Rural Distance Tutors

Table4: Demographic Information of Rural Distance Tutors

Tutor Name	Gender	Tutoring Experience	Program category
Alia	F	4	Secondary
Anita	F	6	Secondary/Higher
Angel	F	3	B.Ed
Asim	M	9	B.Ed/Masters
Jonny	M	6	Bachelor/Masters
Zaid	M	4	Secondary
Sihaam	M	3	Masters/M.Phil
Umar	M	7	Secondary/Higher
Sajjad	M	6	Bachelor/Masters
Zargaam	M	5	B,Ed

Note: Pen names are used for tutors

Research Design

The qualitative researchers in various studies already described the teachers' perceptions with regards to quality of education (Sak 2004, Fleith 2000); therefore in present case we preferred the qualitative method.

Data Collection and Data Analysis

For the current research study; 10-semi-structured interviews were administered face to face with selected distance tutors (3 females, 7 male). An interview guide with an open ended design was used. Before the interviews were started, the interview questions were showed to some of the respondents because they wanted to see it. All the interviews were audio recorded in the researcher's own cell phone with the consent and agreement of the respondents and transcribed the whole data word by word after the interviews were recorded. According to the main objective of the study, mainly the following one question was asked in the interview. "*How do you perceive the role of AIOU to provide quality education for rural areas in Pakistan?*" All interviews lasted approximately 30 minutes. The interviews took place in the respondents' place of residence. The transcriptions from the recordings were coded and subjected to thematic analysis. All the scripts of the interviews were analyzed according to the coding method of Miles and Huberman (1994). The codes were then written according to the categories aroused from the interview question, and finally, themes were created after the data were coded as was done in Chan and Yuen (2015) and Saldana (2009).

RESULTS

The findings were mainly categorized according to the mentioned research question of the study. The themes helped in forming the codes and vice versa. All the themes supported the findings that were drawn from the interviews and it gave much

support to the distance teachers' views about the role of AIOU to provide quality education in rural areas of Pakistan.

The Role of AIOU to Provide Quality Education for Rural Peoples in Pakistan

The role of AIOU to provide quality education for rural peoples in Pakistan is important and proved, because the AIOU alone provide education opportunity for far flung areas. If rural people want to study at their door step then AIOU provide platform. This evidence was stated by Alia in her interview as:

Obviously, AIOU is major contributor in rural education, because this is the institute through which anyone can learn without boundaries. Quality of education is also good. I'm serving since 2013 as tutor and I'm also elementary school teacher so obviously AIOU is very important partner of education for all (Alia).

The distance students learn many things from the book but they also need guidance for many complicated themes, so at this time distance tutor provided by university perform their role as part time teacher. This facility shows moderation of education provider. No one feel that he or she is far from university.

We, distance education tutors are available full time for guidance of students physically, telephonically or through email. Mostly girls are allotted to me, so they can visit my house easily and can talk about any difficulty or problem (Anita).

Angel stated that the learning opportunities for the students are greater in doing the practice and discussion. Therefore; there are many tutorial sessions during semester, so student can join according to availability of time.

Yes, of course through tutorial sessions the students learn more and can discuss their study problems. The students

don't get much information through text, but when they discuss their knowledge is improved more (Angel).

One of the teachers highlighted about the quality assurance of university that during the semester teachers should work hard on their duties, regional offices check the record and secretly evaluate the performance of distance tutors, study centers and other administrative partners.

Yes, of course quality education is first preference of AIOU, through appraisal reports and surprise checking university maintains the quality of education (Asim)

It was also shown that people those are living far flung areas getting full benefits and many students completed their secondary school to master degree education through AIOU and further more serving as teachers, officers etc. So it shows that they got quality education even they were far from the urban areas.

I was a distance learner of AIOU. I completed my master degree from AIOU. My village is far from city area and my family is illiterate. I decided to study and completed master degree. Now I'm a primary teacher and distance tutor also. I'm determined to provide quality education through my services in AIOU and public school (Sihaam)

DISCUSSION & CONCLUSIONS

It is not easy to delineate quality assurance in relation to education; though, without the speedy increase of real excellence tutoring, there can barely be any extent for sustainable growth. The different quality markers highlighted in this article are hub to education course particularly those which are aimed at developing professionals in various areas as well as leaders and decision makers in the society. Rural education sustainable development, AIOU is major education

provider for all from secondary level to PhD without discrimination of gender, religion, locality and age. Generally three categories of schooling are exercised in Pakistan: the private schools, the public schools and, the religious school. Major portion of population almost 65% people belong to rural areas in Pakistan.

Rural community is the most imperative and essential centre of rural life of Pakistan. But facilities of education and capacities of villagers are not good to get further education. The question of AIOU's contribution of quality in education is directly related to the quality of teachers, students and the infrastructure provided to them by the institution. It is observed that the level of competence of teachers, curricula and the standards of student intake are the major contributing factors. 52% students of AIOU belong to rural areas of Pakistan. At AIOU, we believe that female literacy needs to have a special focus, especially in the far flung areas of the country where girls do not have educational institutions close to their homes, and offers a number of programs to facilitate female literacy (vice-chancellor AIOU). All rural distance tutors' views about the role of AIOU to provide quality education were very encouraging, motivated and positive and they confirmed that the quality of teachers, students and the infrastructure of AIOU are very good. AIOU steadily moving towards more improvement where needed but there is a dire need of opening more educational institutions to provide services for rural peoples.

Limitations

The current research study was limited to 10 distance rural tutors of AIOU only, who were involved directly in tutoring in rural areas of Pakistan. The small sample size (N=10) limits the generalize ability of the current research results (Chan and Yuen 2015). The current research study can only be perceived

as a qualitative small-scale research. Due to time and resource limitations, a larger and more representative group of teachers were not feasible in the current research study although there are definitely many more teachers with or without a background in distance education tutoring that can make more contribution but that sample was beyond the scope of the present research. More specifically, the interview method can lead to the subjective results in the current research, because it was based on teachers' self-reporting beliefs towards AIOU (Chan and Yuen 2015). Finally, it is suggested by the current researchers for the future studies to use other research techniques, such as focus group interviews, quantitative surveys, and content analysis and/or review studies which would help them more to confirm the teachers' reported perceptions.

Acknowledgments:

I am grateful to rural distance tutors of Allama Iqbal Open University Pakistan for their help to conduct this study. The researcher also extends his gratitude to the Faculty of Education & Institute of Rural Education Development, Northeast Normal University China for the official support. This paper was initially presented in international conference on rural education; education promotes rural transformation held in Northeast Normal University China on November 18-19, 2017.

REFERENCES

1. An Overview: Allama Iqbal Open University Pakistan. (2016). Retrieved from <http://aiou.edu.pk/>
2. American Federation of Teachers (2000, April). Building a profession: Strengthening teacher preparation and induction (Report of the K-12 Teacher Education Task Force). Washington, D. C.

3. Adams, T. (1998). Prospective elementary teachers' mathematics subject matter knowledge: The real number system. *Journal for Research in Mathematics Education*, 20, 35-48.
4. Bernard, A. (1999). The child-friendly school: a summary. Paper written for UNICEF New York
5. Ball, D. L. (1990a). Prospective elementary and secondary teachers' understanding of division. *Journal of Research in Mathematics Education*, 21, 132-144.
6. Educational Policy 2009, Ministry of Education, Government of Pakistan. (2009). Retrieved from <http://www.pakistan.gov.pk/>
7. Dakar Framework for Action, World Education Forum. (2000, April 26). ED-2000/CONF/211/1 - Dakar Framework for Action. Education for All: Meeting Our Collective Commitments - UN Documents: Gathering a body of global agreements. Retrieved from <http://un-documents.net/dakarfa.htm>
8. de Souza Fleith, D. (2000). Teacher and student perceptions of creativity in the classroom environment. *Roeper Review*, 22(3), 148-153.
9. Murnane, R. J. (1987). Improving Education Indicators and Economic Indicators: The Same Problems? Retrieved from <http://journals.sagepub.com/doi/abs/10.3102/01623737009002101>
10. Fillip, B. (2001). *Distance education in Central America and the Caribbean: Making the most of the region's experience and tackling challenges and opportunities of the new information and communications technologies*. Tokyo, Japan, and Washington, DC: Japan International Cooperation Agency.
11. Keegan, D. (1980). On defining distance education. *Distance Education* 1(1), 13-36.

12. Newby, T. J., Stepich, D. A., Lehman, J. D., & Russell, J. D. (2000). *Instruction technology for teaching and learning*. Upper Saddle River, NJ: Merrill.
13. Perraton, H. (2000). *Open and distance learning in the developing world*. New York: Rutledge
14. Roblyer, M. D., & Edwards, J. (2000). *Integrating educational technology into teaching* (2nd ed.). Upper Saddle River, NJ: Merrill.
15. Sangi (2005). "Engineering Quality Learning through ICT: An AIOU Model for Online Education and Research" http://www.pandora-asia.org/downloads/05-ICDE_Sangi.pdf
16. Sak U (2004). About creativity, giftedness, and teaching the creatively gifted in the classroom. *Roeper Review* 26: 216-222.
17. United States. Department of Education. (2002). *A researcher's guide to the U.S. Department of Education*. Retrieved from The Dept website: <https://www.ed.gov/>
18. Willis, B. (1992). *Instructional development for distance education*. ERIC Clearinghouse.