6. **Pakistan Case Study: Teacher Education in Pakistan**

A major concern regarding Pakistan’s education system is the high dropout rate from primary schools. Apart from extreme poverty, the inability of schools to retain students is a major factor leading to high dropout rates. In this regard, teachers have a pivotal role to play in engaging students through interactive learning methods and developing the student’s interest to remain at school. The major challenge in integrating ICT in the teaching-learning process in Pakistan is the low competency level of teachers, stemming from the fact that very low level of academic qualifications are required to become a teacher. To address this issue and to improve the overall quality of the education delivered to the students, the Government of Pakistan has taken various steps to set standards for teacher education and enhance teacher training institutes. In Pakistan, even private companies have directed their corporate social responsibility division to educate the teachers particularly in terms of using ICT in the teaching-learning process.

6.1. **Government Policy and Vision**

The Ministry of Education in the “National Standards for Teacher Education” has proposed ten standards for teacher training institutes to abide by. The application of ICT to strengthen the quality of teaching and educational management in Pakistan is one of the core elements of the government’s ICT in education vision. In the “National Information and Communications Technology (NCIT) Strategy for Education in Pakistan,” the government proposed various strategies to enhance teaching quality by supporting and reinforcing the use of innovative teaching practices.

6.2. **Administration**

Teacher Training is administered by the provincial departments/organizations as well as the Curriculum Wing of the Ministry of Education. According to the Academy of Educational Planning and Management (AEPAM), in 2007, there were 275 Teacher education/training institutes in Pakistan out of which 227 were government-owned institutes. For government school teachers, training is imparted through Government Colleges for Elementary Teachers (GCETs), the distance education program of Allama Iqbal Open University and teacher training courses run in secondary schools known as Normal Schools or PTC units (Memon, 2007).

6.3. **Current Situation**

Despite the various efforts taken by the government and donor agencies, the quality and competency level of teachers remains low in Pakistan. This is an alarming fact considering 85% of the teachers are estimated to be trained, however the quality level of teachers who are deemed to be trained is questionable, primarily due to the low level of educational qualifications required to become a trained teacher. A primary school teacher only needs ten years of schooling and an eleven month certificate program. Aside from the number of years of formal schooling received being less, the quality of the certification program is also questionable. Little emphasis is laid on teaching methods and no monitoring and evaluation system is in place for the program (Memon, 2007).
6.4. Major Initiatives

The government along with many non-government and private donors has made efforts to establish and enhance Teacher Training institutes, particularly in terms of educating teachers on how to integrate ICT in the learning-teaching process. Some of these initiatives are highlighted in the following:

6.4.1. Intel Teach Program

The mission of the Intel Education Initiative is to prepare students across the globe for the 21st century. To achieve this goal Intel seeks to improve teaching and learning through the effective use of technology and to advocate for educational excellence through multilateral organizations. In Pakistan more than 200,000 Master Teachers and Participant Teachers have been trained on using technology for the delivery of education. Intel carries out its objectives through a portfolio of programs which are outlined in the following:

Intel Teach Program (In-service Program)

The Intel Teach Program is a professional development program that helps classroom teachers effectively integrate technology to enhance student learning. The program follows the “Train the Trainer Model” and is designed to help bring schools into the 21st century by providing teachers and administrators with the skills and resources they need to bring about the change. The Intel Teach Program is a customizable set of offerings that range from basic ICT literacy skills to training on tools that support students’ development of 21st century skills. It also includes the training of school administrators on effective ICT implementation. In 2002, Intel signed an MoU with the Ministry of Education, Government of Pakistan, to train teachers across the country, including Sindh, Baluchistan, Punjab, NWFP, FATA, FANA, ICT, and Pakistan administered Kashmir. Within each provincial ministry, contact persons have been assigned by the Secretaries and Ministers to help the Intel team with the operational aspects of the program. In Pakistan, apart from government schools, Intel has also trained private school teachers but these schools are contacted directly. The training activities are supported and assessed through a comprehensive evaluation program. The Intel Teach Program portfolio includes both face-to-face training and online resources and tools that consist of:

Skills for Success Course

Through a formal curriculum, teachers learn to deliver a prepared curriculum incorporating student-centered activities and projects exploring practical technology tools. These projects utilize technology tools such as word processor, multimedia and spreadsheets.

Getting Started Course

This course introduces software productivity tools and student-centered learning approaches to teachers with little or no technology experience. The course is carried out through a series of 12 two-hour modules that can be expanded to 32 hours of face-to-face instructions, individual work,
hands-on activities, discussion, and teamwork.

**Essentials Course**

Once the teachers have been trained on using technology and basic software, the Essentials Course trains the teachers on how to integrate this technology into existing classroom curricula to promote student learning. It is typically a 10-module, 40-hour; face-to-face professional development course. The online version allows a flexible blend of online as well face-to-face training.

**Thinking with Technology Course**

This course is typically a 24 to 40 hour workshop that builds on key concepts acquired in the Essentials course to enhance students’ higher-order thinking skills using a set of free online “thinking tools.” These thinking tools can be used with any subject area and are designed to help students visually represent their understanding of complex interconnected ideas and issues.

**Advanced Online Course**

This course enables teachers to build communities to advance the integration of technology and 21st century learning through a blend of face-to-face and online training. This is also a follow-on resource that allows teachers to engage in ongoing learning and continue their collaborations online.

**Intel Teach Elements**

This is a series of short courses which include animated e-learning tutorials, interactive learning exercises and offline activities to apply concepts. An option is also available for teachers to take the course as per their convenience through a self-paced program.

**Leadership Forums**

To ensure its effective and judicious use of ICT, principals need to develop strategies to encourage and motivate teachers to integrate technology, enhance student learning and ensure the optimum use of available resources. To accomplish this Intel conducted a number of workshops and seminars to spread awareness among school principals.

**Intel Teach Program (Pre-service program)**

The Intel Teach Pre-service Program empowers the faculty in teacher education institutions to train their students with the knowledge, skills, and attitudes required to integrate technology-supported project-based learning into the future classroom. During the training, pre-service teachers learn how to integrate technology judiciously and seamlessly in their classroom processes. As a result, they enter their first classrooms equipped with the knowledge, skills, and capabilities to integrate technology resources into any unit they teach.
Intel partnered with the Ministry of Education Pakistan, pre-service governing bodies, and the Teacher Education Institutes (TEI) to introduce the pre-service program in Pakistan in 2005. A pilot program was conducted in the Punjab through the Punjab Provincial University of Education. The total enrollment has been more than 8,000 pre service teachers annually ever since. The pre-service program has also been implemented in Sindh through the Menrah University of Sindh which trains 1,000 teachers annually and the Karachi Institute of Teacher Education.

In 2009, Intel signed an MoU with a consortium partner in Pre-STEP (the Pre-service Teacher Education Program). Pre-STEP is a five year, national program led by the Academy of Educational Development (AED), with support from USAID. Under this agreement Intel Pakistan and Pre-STEP will develop and pilot a technology course with the objective that trainee teachers receive hands on experience with technology-aided teaching methodologies. Pre-STEP aims to strengthen the capacity of 75 teacher training institutes and 15 universities in Pakistan.

### Constraints Faced by Intel in Implementing ICT in Education in Pakistan

#### Constraining Factors
- Lack of availability of infrastructure (hardware)
- No connectivity in most of the government and private schools
- Regular power breakdown
- Lack of coherent Policy framework
- Lack of IT awareness
- Rigid education policies

#### Procuring Funds

Government has limited funds for education due to which they hesitate to allocate funding for ICT in Education initiatives, but in some areas district government provided support in terms of providing Travel Allowance to teachers.

#### Intel’s Role in Overcoming Constraints
- Intel is providing labs to government school under the ICT for Education program
- Intel has approached third party development agencies to provide infrastructure
- Advocacy of ICT in education in different forums, such as Reform Support Unit Govt. of Sindh, MoU with MoE and different Development Agencies and private schools.

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**Sharleen Ghauri, Corporate Affairs Manager, Intel Pakistan Corporation**
6.4.2. ICT for Science Teachers Project

The academy of Educational Planning and Management (AEPAM) was established in 1982 to assist the MoE in planning, monitoring and policy formulation. Among the various responsibilities that AEPAM is charged with, organizing training programs particularly in terms of IT and computer skills to head teachers, teachers, computer personnel and education managers is of their major responsibilities. In this regard, AEPAM initiated the ICT for Science Teachers Project, which is a basic training program for teachers from Islamabad, FATA and FANA to develop computer skills so as to enhance their professional competency. The objectives of the project are highlighted as follows:

- To orientate teachers with the basic functions and operations of a computer system
- To acquaint teachers with the scope and benefits of implementing ICT in teaching-learning process
- To orientate teachers with the Internet and with frequently used software such as word-processing and spreadsheet software.
- To provide hands on experience in using ICT to improve their teaching-learning process

The project was carried out in a phased manner; from 2005 to 2008, AEPAM conducted 17 two week training programs under which it trained a total of 421 science teachers.
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