

Computer Literacy Programme

An innovative approach for spreading IT to rural Bangladesh

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Loona, Moona and Meghna, similar in age, are enrolled at the same grade level. Loona is among the top few students in her class at New York's Stuyvesant High School. Moona alternates between second and third place in her class in Dhaka's Green Herald School. Meghna is the top student in her class at Shimulpur High School.

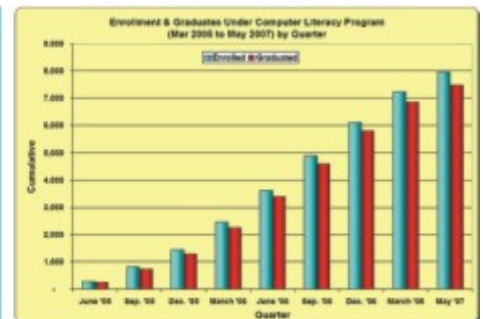
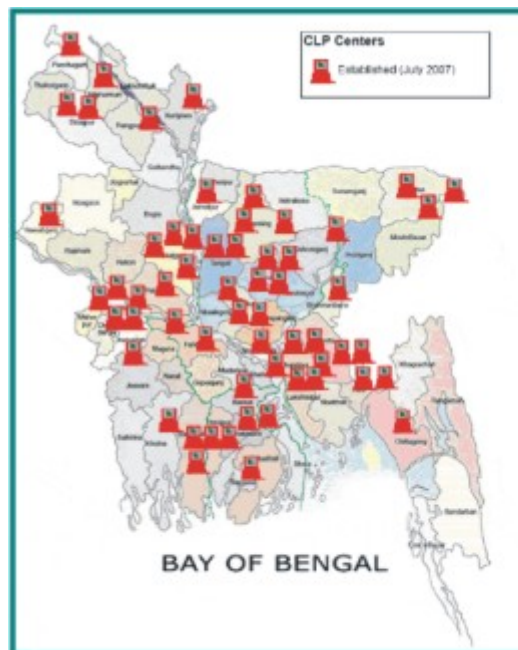
Loona's computer, which she uses for homework and reports and for literature search for projects, has an internet connection. A literature search that used to take a week can be done in about half an hour on the internet.

Her father thinks that the computer-internet combination is as important in spreading knowledge and information as the printing press. Loona also carries out social interactions via e-mails, instant messaging, and online chat rooms, and downloads music, news and weather reports. Simply put, Loona is intimately networked with the digitally connected world.

Moona also has a computer, which she uses to printout her final report on important projects. Since she is taking a computer course this year, her computer is a real help; she can take her time learning.

Her parents allow her very limited access to the internet and e-mails. Moona's uncle sent two educational CD ROMs with lectures by renowned professors. The course on astronomy was fabulous, and Moona learned a lot about the secrets of the universe.

Meghna would very much like to take the computer course in her secondary school certificate (SSC) exam, but she is not sure if it is going to happen. She does not find the content-heavy manual printed on newsprint in black and white that attractive. The science teacher keeps on saying that he would bring the computer out of its carton in the headmaster's office, however, that is yet to happen. Meghna is on the wrong side of the "digital divide."



"Digital divide" is the vast difference in access to information technology between much-endowed Loona, somewhat-lucky Moona and outright-deprived Meghna. Since information technology is changing the mode of instruction with ever increasing speed, this divide is far more ominous than other disparities of modern life, but it is more amenable to remedy than many other differences.

India has transformed itself into an information technology giant, and Bangladesh, too, has that potential. The first condition for realisation of that potential is the spread of computer education and usage. The computer literacy program (CLP) is an essential step towards that goal.

How CLP started

A few expatriate Bangladeshis in New Jersey came up with the concept and plan for implementation of the CLP. They did not have to look too far to find the Volunteers Association for Bangladesh (VAB) to help with the organisational framework.

VAB is devoted to helping the underprivileged youth with education and training through scholarships, science laboratories, library books and teacher training, and has activities in 24 high schools in Bangladesh. The similarities in overall objectives prompted the CLP to form the New Jersey Chapter of VAB, (VAB-NJ).

The principal aim of VAB-NJ is to empower the underprivileged youths in Bangladesh through computer literacy, but it was clear to VAB-NJ that it would be impossible to carry out the program without an implementation arm in Bangladesh. VAB-NJ then formed a partnership with D. Net for assistance. D. Net is devoted to spreading of information technology in Bangladesh, particularly in the rural areas.

Computer learning centres

CLP's first step was to establish Computer Learning Centres (CLCs) in educational institutions in rural Bangladesh. In selecting the sites for CLCs, consideration was given to geographical location, availability of electricity, eagerness of the school management and its willingness to help. Every CLC has a computer lab for hands-on training, and is provided with a minimum of four computers, one printer, and other accessories.

An introductory curriculum was developed in consultation with computer scientists, based on which a student's manual, "*Esho Computer Shikhi*" (*Let Us Learn Computers*), has been published. Two teachers from each CLC receive two weeks of intensive training from D.Net professionals. They are also provided with a "teacher's manual."

Students receive hands-on training on computers free of charge (the picture shows a typical CLC), and are given a copy of the student's manual at a nominal cost. In each batch, 8 to 10 students are taught for two hours a day, twice a week for eight weeks, about the parts of a computer, fundamental usage, Microsoft Word, Excel spreadsheet, and Paint programs.

The classes are taken outside of the school's normal schedule, and, since the teachers provide the service in addition to their regular duties, CLP pays each teacher Tk 750 per month.

VAB-NJ provides the conceptual framework, implementation directives, computers, teachers' honorarium, and funds for project implementation. D.Net assists in selecting the host institution, production of the manuals and curriculum, teacher training, physical establishment of the computer lab, technical oversight to keep the computers operational, monitoring the progress of each CLC, and overall management of the program.

The school management and local residents provide the rooms, furniture, electricity as well as encouragement to the teachers and students. Since all three entities contribute, there is less chance of any "charity mentality" and related complications setting in.

Where is CLP today

In 2004 the CLP started with the objective of setting up 20 CLCs. In June 2007, 54 CLCs were fully operational in 28 districts, and another 5 are to be opened by July 2007. The map shows the location of the 59 centers, of which 54 are located in educational institutions, 4 in community centers and one in a library.

As of May 2007, 90 male and 24 female teachers have been trained, and 7,945 students participated in the program of which 7,469 received certificate of completion. Of these, 48% are female students. The bar graph presents the enrollment and graduation statistics for the program. 4,000 copies of the student's manual were printed, of which

3,400 were distributed at a nominal price.

CLP is making a difference

Even though 59 CLCs may be perceived as miniscule, the accumulation of small advances and accomplishments has been encouraging to VAB-NJ and the recipient organisations. The biggest achievement has been the wide-eyed inquisitiveness of the students, teachers and parents, and their eagerness to learn.

Aspiring students wait fervently for their turns and, in most CLCs, enrollment increased because of the computer labs. The number of students applying to take computer course in the SSC exam is also increasing. While students' scores in the SSC computer science practical examination was hovering near 70%, the figure jumped to nearly 100% in schools with CLCs.

Teachers of other subjects are also falling in line. One English teacher said: "I keep hearing terms such as "hardware," "software," "mouse," "log-in," "log-out" all the time, and I have no clue what those mean. It's time I became a computer literate as well."

CLP is showing slow but sure signs of opening doors of possibilities to the graduates. Rubel Islam and Alamgir Hossain of Daulatpur have secured employment in computer related positions with the Bangladesh Army.

Instructor Farhana Akhter encouraged two of her students, Ziaur Rahmana and Jahidur Rahman, to start their own computer store. CLP is, thus, bringing new career possibilities to the graduates.

The CLCs are encouraging students and teachers to venture out of their own spaces and empowering them to take new steps. Teachers are using computers for tabulating and analysing students' grades, scheduling school activities, and for resource management.

Recently, administrators of the Mymensingh Teachers' Training College contacted the CLP when their B. Ed. (Bachelor of Education) students needed computer training and 65 B. Ed students were trained at the Muktagacha and Mymensingh CLCs. This is an example of how CLP has assisted in areas completely outside the original objectives.

CLP uses a comprehensive approach for program implementation, which includes establishment of computer labs, curriculum development, hands-on training, teachers' incentive honorarium, equipment maintenance, and overall management. This approach received accolade in an educational conference on information technology held in Cairo in 2005.

A Canadian information technology expert commented that, to his knowledge, CLP was the only example in the world where resident and non-resident nationals could push the program so successfully without any foreign donation.

Support and sustenance

VAB-NJ is financing the CLP by raising funds and grants from non-resident Bangladeshis (NRBs). A sponsor can help through direct cash contribution, and "donate a computer" and "adopt a computer learning center" projects.

Under the "adopt a computer learning center" project, a sponsor can choose an educational or social institution and donate money. A CLC is established in that institution provided it satisfies the core requirements of space, furniture, and availability of electricity. The sponsor's contribution is two-thirds of the cost, the remainder is paid by the program funds.

Almost 75% of the existing CLCs have been established under this project. The "adopt a CLC" project has several attractive features. In most cases, a sponsor typically selects his or her village school as the designated center, and has sponsor has personal interest in seeing the CLC succeed. His friends and relatives can monitor the progress of the center, which assists in achieving the objectives of CLP.

CLP is turning out to be a model of how the efforts of an individual can advance a community. If many sponsors came out and established CLC's in their villages, then numerous centers could be developed without any major governmental initiative; and the digital divide could be bridged.

The students at the CLCs can learn about the successes of their predecessors, which encourages them to aim higher,

and helps establish a useful connection between today's success and tomorrow's promise.

The VAB-NJ volunteers have taken initiatives to spread information about CLP in US and in UK. The response has been very encouraging. Some have volunteered their time, and one NRB has committed to bear half of the start-up expenses for a new initiative.

A major institutional grant for implementation of the program came from the Khan Family Foundation in California. The support from this foundation, set up by Dr. Imdad Khan (now deceased) and his wife Mrs. Sitara Khan, helped establish 10 of the CLCs, provided incentive honorarium for teachers, and paid for a substantial fraction of the project management costs.

D.Net organised fundraising events in Bangladesh and bore a part of the expenses. The success of the program, the conscientious efforts of the D. Net professionals, the devotion of teachers, and the eagerness and enthusiasm of students attracted the attention of other individuals and institutions.

Bank Asia provided funds for establishing three CLCs, diplomats visited a CLC and donated four new computers, and the Dhaka office of the International Monetary Fund provided four previously used but very high quality computers to another CLC.

The most significant recognition came from Microsoft, which has committed funds for establishing 13 Community for Learning Information Communication and Knowledge (Click) centers. Seven Click centers have already been established, and by the September of this year all will be in operation.

These centers emulate the CLC model but, unlike most CLCs, they will be based at community centers. The principal aim of the Click centers is to provide training to unemployed educated youth in rural Bangladesh.

The curriculum will include desktop publication, web-site development, database programming, and information services for rural population. The Click centers also provide livelihood information service and income generating services, such as photography, soil testing, internet browsing etc.

Support for CLP should be seen as an "investment in the underprivileged," and not as "charity." Bangladesh is optimally suited for such investments because of its sizable technically educated workforce, and low labour and overhead cost. It is much cheaper to develop and teach elementary and intermediate level computer courses, or to provide other educational and training services in Bangladesh. The instructional materials and technical know-how are expected to have a much wider, even global, impact, like "Grameen Bank."

Self-assessment and impact evaluation

The initiators continually discuss among themselves, seek input from peers, and take decisions after careful analysis. It is equally important to obtain feedback from independent, external observers. Recently, a graduate student from the Fletcher School of Government of the Tufts University carried out an evaluation of CLP based on structured questionnaires, interviews and focus group discussions.

The study report entitled, "Bridging Digital Divide for Rural Youth: An Experience from Computer Literacy Program in Bangladesh," is available online at the VAB-NJ and D.Net websites. The study came up with some interesting observations.

First, CLP graduates tend to collaborate with and learn from one another more than their peers who did not go through the program do. Teachers report that CLP trained students do better in other subjects as well. Finally, the presence of a CLC in a school enhances enrollment in, and transfer of students to, that school.

Looking ahead

Success breeds new expectations. There have been demands to increase the number of centers at a faster pace, and to expand the scope of the program. The evaluation study came up with some crucial recommendations as well.

These include more time for students to practice on the computer, introduction of advanced courses, increasing of teachers' incentive honorarium, refresher and more advanced training for teachers, and leveraging the existing computers for more effective teaching of other subjects, such as science and mathematics.

In response to these demands, and in consideration of potential impact at the grass root level, some new initiatives are being considered. "computer teaches everyday English (CTEE)" aims to leverage the availability of computers to enhance English learning and the communication skills of the students.

Emphasis will be placed on developing students' skills in comprehending and communicating ideas in English, both orally and in writing. Preparations are underway to develop an educational CD ROM, using contents that the students are familiar with. The project will be implemented in five centers at a pilot level.

D.Net is in discussions with Foundation for Education Research and Invention (FERI), Bangladesh Math Olympiad, and Institute of Education of Brac University, for developing multimedia instructional materials for enhancing the level of mathematics and science teaching.

The future activities of CLP include keeping the existing CLCs in operation, developing curriculum and manual for the next level of instructions, providing internet access to the CLCs, and modernising the education system using computer and information technology. In order to maintain the vitality of the CLCs, one needs to service the existing computers, replace older machines with newer ones, maintain steady flow of funds to continue and increase teachers' incentive honorarium.

Already 19 CLCs have been provided with 19 new computers. The maintenance and service cost per CLC per year is \$1,350, which includes fees for project management, provision of parts and services, teachers' honorarium, and replacement of an old computer by a new one (\$400).

Gathering dreams

As mentioned earlier, CLP's capabilities are limited, but in three years 59 CLCs have been established. Obviously success to date is dwarfed by national need. However, the experience gathered and lessons learned encourage bigger dreams.

The deprived students in the remote villages of Bangladesh have shown that they can make good use of every little opportunity provided to them. CLP has demonstrated that NRBs, with their expertise and resources, can effectively contribute to developmental projects that help the country.

The Computer Literacy Project is a small but determined effort of a few NRBs. It is just one candle. Thousands of such candles can burn bright and remove the darkness of digital illiteracy.

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