साझा शिक्षा ई-पाटी
Open Learning Exchange Nepal

ICT-Integrated Teaching Learning Project, Belbas
April 2011 - March 2012
Final Report

Submitted by:
Open Learning Exchange Nepal
Sanepa, Nepal

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1. Introduction

Open Learning Exchange Nepal (OLE Nepal) is a Nepali not-for-profit organization registered with the Kathmandu District Administration Office, the Kathmandu District Development Committee and the Social Welfare Council. The organization, officially registered in September 2007, is dedicated to improving equality of education and reducing disparity in quality and access in Nepal's public education system through the integration of Information and Communications Technology (ICT) in daily teaching learning processes. It seeks to fulfill this mission by developing and disseminating high quality open-source digital educational materials that are accessible and available free of cost to all, and by preparing teachers to use the materials effectively in their classrooms. The integration of ICT–based teaching–learning approaches into the regular school curriculum and mainstream pedagogy can significantly improve Nepal's potential to meet the Education for All (EFA) goals.

2. Project Background

Rabobank and their clients in co-operation with MeetIn provided laptops to Shree Siddhabeni Lower Secondary School of Belbas, Tanahu district, and partnered with OLE Nepal to implement the program including teacher training, equipment and local network installation, monitoring and support. People from the town of Goshen, Indiana in the US also contributed funds raised with help from Mr. Ram KC towards the laptops needed for the school. A total of 50 laptops were provided to the school for the program.

This also marked only the second time that OLE Nepal had implemented a ‘shared model’ using OLPC laptops. In this model, each class would take turns using the laptops. Although different classes share the laptops, each student will have direct access to individual laptop when his or her class is scheduled for laptop-based lessons. Likewise, the training programs were designed with extra components on maximizing the use of laptops in a shared setting and on proper management of the laptops and scheduling. Different effective ways to use the laptops in shared setting were discussed during the trainings, including allocating free time for students to use laptops to explore other educational activities and to read books available in E-Pustakalaya.

3. Project Activities

3.1. Prior Information about School

Prior to commencement of the project, OLE Nepal established communication link with the head teacher of Shree Siddhabeni Lower Secondary School, Mr. Laxmi Kanta Mishra, and obtained basic information about the school including their infrastructure, teacher information, class size, etc.

3.2. Grades and Subjects

The project covered students from grades 2 to 6 on a shared-model basis. Similarly, an entire set of curriculum based education learning activities were provided for

grades two to four in English, Nepali and mathematics, for grades five and six in English and mathematics, and for grade five in science.

3.3. Teacher Training

3.3.1. Basic Teacher Training

OLE Nepal provided an initial seven-day teacher training program from May 15 to 21 for thirteen teachers at the school. The training was conducted jointly by Mr. Govinda Pokharel from Educational Training Center (ETC) Tanahu, and Mr. Tikaraj Karki from OLE Nepal. The training module and content was developed by OLE Nepal to help teachers integrate ICT in daily classroom teaching.

Training module and content was slightly different from OLE Nepal's usual ICT-integrated teacher training program in order to accommodate suggested shared model of teaching at the school.

3.3.2. In-school Training

OLE Nepal's trainer, Tikaraj Karki, and technical support staff, Aman Maharjan visited Shree Siddha Beni Lower Secondary School in Belbas, Tanahu on August 23-25, 2011 to observe classes and provide feedback and support to the teachers. The team also updated laptops and school server with the latest E-Paath activities and E-Pustakalaya content. Mr. Govinda Pokhrel, trainer from Educational Training Center (ETC) Tanahu, also joined the OLE Nepal for the in-school training. A total of 10 teachers from the school participated in the in-school training.

3.3.3. Refresher Training

OLE Nepal's trainer and technical support team visited Shree Siddha Beni Lower Secondary School in Belbas, Tanahu from December 12 to 14, 2011 to conduct refresher training and provide support to the teachers. The team also updated E-Paati laptops and school server with the latest E-Paath activities and E-Pustakalaya content respectively. A total of 12 teachers from the school participated in the refresher training.

The refresher training package was developed based on feedback from teachers of pilot schools and in conjunction with relevant government bodies. The objective of the refresher training was to a) reinforce the concepts of E-Paati-integrated teaching learning method that were covered during the main training; b) address issues, difficulties, and challenges teachers may have had in integrating E-Paati based approach in mainstream pedagogy; c) Clarify misconceptions associated with various aspects of the project; d) train teachers to integrate E-Pustakalaya in daily teaching process and e) cover advance topics in E-Paati usage (since they would have at that point been using the laptops for several months).

3.4. Laptop Deployment

A total of 50 OLPC laptops (E-Paati) were deployed in the school during the first visit by the OLE Nepal technical team comprising of Power Engineer, Mr. Ram Singh, and technical support staff, Mr. Aayoush Onta.

3.5. Network and Power Infrastructure

The network and power infrastructure within the school were completed during the first visit by the technical team. The school was given prior notice on how to wire the classrooms. OLE Nepal's team assisted in school in completing the wiring, and set up access points (wireless routers) in the classroom so that students can connect to the school server through wireless from their laptops. The school was also provided with specially-made charging racks for the laptops. The racks were designed to store and charge the laptops when they were not being used. OLE Nepal paid special attention to safety precautions when designing the charging racks. In addition, a power backup system was placed at the school to get the school server and wireless routers running even during power outages.

3.6. Monitoring and Supporting the schools

Providing regular support at the school have included the following tasks:

- Updating new E-Paath activities
- Updating the E-Pustakalaya with new materials
- Fixing software related problems in laptops and servers
- Fixing hardware problems in laptops and servers
- Ensuring that network within the school is operational
- Providing support and refresher training to teachers

The E-Paath activities have been bundled in a whole package which is sufficient for the whole academic year. Also, most software related problems in the laptops can easily be fixed locally by simply re-flashing the laptops with the help of a USB key. Anyone who knows how to use a computer can do this with some instructions.

Monitoring was carried out by members of the visiting OLE Nepal team as part of the support visits to monitor progress using the tools developed by OLE Nepal together with Department of Education (DoE) and other government officials, and to gather feedback.

4. Other Related Activities

4.1. Education Content Development

Digital content is the backbone of ICT-based education and at the core of what OLE Nepal does. Providing laptops with relevant and localized education content increases the possibility of them being used regularly in the classroom process. At OLE Nepal, the development of interactive learning activities is driven by educators who have a solid understanding of education theories, and a thorough knowledge of the national curriculum.

4.1.1. E-Paath

OLE Nepal has recently started creating interactive digital learning activities for Grade 2, 3, 4 and 6 (Grade 5 activities have already been completed) for the entire academic year designed to teach children about agriculture, food and nutrition, with special emphasis on the need for balanced gender roles in agriculture and food production. These activities are being developed in both English and Nepali languages, and will be correlated with the 'Science, Health and Physical Education' subject prescribed by the Curriculum Development Center (CDC). The development of these activities are scheduled to be completed by July 2012.

These activities will be included in the larger collection of similar learning activities E-Paath that OLE Nepal has developed for grade 2, 3 and 4 English, Nepali and mathematics, grade 5 English, science and mathematics, and grade 6 English and mathematics. OLE Nepal's curriculum experts are working together with CDC officials to ensure close relation to the learning objectives outlined in the national curriculum. Such alignment with the Science, Health and Physical Education curriculum will increase the likelihood of the activities being used regularly by teachers and students in daily classroom teaching-learning process. Experts in agriculture, food and nutrition, health and hygiene will also be consulted to ensure that relevant issues are adequately and properly presented to students at various grades.

These new E-Paath activities, like all our other activities, will be accompanied by teachers notes detailing how to integrate the lessons and exercises package as well as suggested practical hands-on activities children should do outside the classroom to promote exciting and effective teaching practices.

OLE Nepal has already prepared 428 E-Paath activities, and the collection will contain over 500 modules by mid-2012. The following table shows the breakdown of learning modules by grades and subjects.

	English	**Mathematics**	**Science**	**Nepali**
Grade 2	36	27	15*	18
Grade 3	36	24	15*	21
Grade 4	39	39	20*	20
Grade 5	39	39	30	-
Grade 6	22	38	30*	-

- *Under development: Will be completed by June 2012*

4.1.2. E-Pustakalaya

In addition to working to increase the content volume of the digital library, OLE Nepal organized series of workshops and interactions with various stakeholders to promote the library and increase the the volume of material. Currently there are around 3000 titles that can be accessed in the library. As part of the deployment, the E-Pustakalaya was installed in the school servers at all 34 program schools so that students and teachers have access to the vast number of digital resources without the need of the Internet. It maybe noteworthy to mention that OLE Nepal has currently signed an MoU with Practical Action, and has received permission from The British Council and E-Learning for Kids to add their educational content on E-Pustakalaya.

An Advisory Panel that was created last year for E-Pustakalaya consisting of prominent members from Nepali literary circles: Geeta Keshary, Chudamani Bandhu, Dhruva K. Ghimire, Rambabu Subedi, Vinaya Kasajoo, Bishwambhar Chanchal and Hiranya Kumari Pathak actively meet at OLE office and give valuable advice and suggestion to improve and increase the volume of the library.

OLE Nepal's E-Pustakalaya project has been receiving continuous support from the Nepal Library Foundation (NLF) since 2009.

Screenshot of E-Pustakalaya

4.2 OLE Nepal's Local Heroes in National Conference

As part of honoring local heroes who have successfully implemented ICT programs to enhance education, the head teacher from Shree Siddhabeni Lower Secondary School of Belbas, Tanahu, Mr. Laxmi Kanta Mishra, was invited to share his experience on ICT-based education in a national conference 'Use of ICT in Rural Nepal' organized by Language Technology Kendra (LTK) in Kathmandu on March 22-23.

Mr. Mishra shared the school's experience in using laptops, and digital library in classroom teaching in a shared-model environment, and how the school as a whole has been reaping the benefits of ICT-integrated classes. In the process, he explained to the participants how each class would take turns using the laptops and how each student has direct access to individual laptop when his or her class is scheduled for laptop-based lessons though different classes share the laptops. He further explained how the digital library is being utilized by the senior classes as well. His presentation generated a lot of interest from other head teachers to introduce similar programs to their respective schools.

5. Conclusion

In conclusion, the school has adopted the ICT-integrated teaching learning program very well. Factors such as strong leadership of the school, motivated teachers and community support have all played a key role in making the program a huge success. Furthermore, the school can be taken as an example in the shared-model implementation of the project.

6. Recommendation

The following recommendations can be made based on the team's visits to the school:

a. Conducting a refresher training and support visit in the upcoming academic session to update content and maintain equipment

b. Adding a wireless router or two to the present list of equipment to make access to the school server, and in turn the E-Pustakalaya, easier

c. Connect the school to the Internet by linking the school through the use of wireless communication technology to nearest point of access in Damauli. Preliminary feasibility study by OLE Nepal's network engineers indicate that such a link is possible to provide Internet connectivity to the school. It should also be noted that the school server that hosts the digital library is also configured as network gateway and filter to prevent access to unsuitable sites.

d. The school server also contains SchoolTool, a student management software that has been customized by OLE Nepal to suit the needs of Nepali school system. This software will enable school administrators and teachers to keep digital records of student attendance and grades while maintaining a school calendar that everyone can use. We believe that the school teachers are now ready to use technology not just in classroom teaching, but in student management and administration. OLE Nepal can provide the training and support needed for teachers to adopt this software.

Annex A: List of teachers trained

SN	Name of Teacher	Teaching class and subject	Remarks
1	Laxmikanta Mishra	-	Head Teacher/ Focal Teacher
2	Indrakala Naral	Class 6 English	
3	Nabin Parajuli	Class 4, 5 & 6 Math	
4	Sukbahadur Rana	Class 5 Science	
5	Arjun Laudari	Class 3 English	
6	Sabitra Khanal	Class 4 English	
7	Khadgabahadur Subedi	Class 2 & 3 Math	
8	Narayan BK	Class 2 & 5 English	
9	Harrichandra Pantha	Class 2 Nepali	
10	Belbahadur Rana	Class 3 Nepali	
11	Sarada Banstola	Class 4 Nepali	
12	Phalbahadur Rana	Special class teacher	Technician
13	Santu Thapa	Librarian	

Annex B: Visits to the school in chronological order

- May 14, 2011
- August 23, 2011
- December 12, 2011
- March 20, 2012