Engaged Learning and ICTs for Community Development

Sujin Butdisuwan[1, a] and Royal Colle[2, b]

[1]Faculty of Informatics, Mahasarakham University, Maha Sarakham, Thailand

[2] College of Agriculture and Life Science, Cornell University, Ithaca, NY, USA

[a]butdisuwan_sujin@yahoo.com, [b]rdc4@cornell.edu

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Abstract. A case study in northeast Thailand involving a university and a community learning centre demonstrates the viability and potential of students helping communities use information and communication technologies for development (ICTD). The case study also shows the learning benefits to the students and to marginalized people in the community. This approach to helping communities use ICTD could be adopted more widely in the Asia and the Pacific region, especially to address such international priorities as the Sustainable Development Goals. This engagement with communities could also help universities become more relevant to their surroundings.

Introduction

This paper reports on a computer science and community development research project in northeastern Thailand. The paper explores directions for future researchers and collaborations that address such international priorities as the Sustainable Development Goals (SDG).

We start by describing the field activity that frames our discussion of how university computer science and similar academic programmes can play a powerful role in helping communities join the digital world. The objective was to help marginalized people go beyond the attraction of digital hardware and apply them constructively to gain access to development resources related to health, agriculture, commerce, and life-long education. It also focused on building partnerships between universities and community learning centres (CLC) in surrounding communities.

The project in northeastern Thailand

We get a hint of the potential of such a partnership from the results of our recent research pilot project in Thailand. A new museum in the Ku Santarat area of northeast Thailand took advantage of regular visits of Mahasarakham University's Faculty of Informatics staff to express a need for help in making the museum's collection available "virtually" to visitors, and for creating within the museum a community learning centre. In addition the community wanted the museum to attract tourists' attention and have them visit some of the culturally significant tourist attractions in the area. Discussions with the community led to the idea of having a data base and a museum website as a part of the museum's development and its future resources.

Students and faculty at Mahasarakham University (MSU) were mentally prepared to engage in such a project because the university has a set of policies for all faculties and units that requires that they engage communities through a programme called One Program, One Community. Confronted with the museum engagement activity, the students believed that they would learn more and do more by becoming centrally involved in a project outside the classroom but one that drew on the classroom experience.

Engagement in the Thai museum project involved a variety of community partners including museum officers, local community officials and villagers, and local teachers and schools. Approximately 100 students and 10 faculty members from the Faculty of Informatics participated in teams to collect,

organize and manage data related to the history, antiquities, and other features of the surrounding cultural sites. The overall process included collecting ideas and data from the partners, deciding what needed to be included in the on-going communication (the website) with visitors to the museum, and how to present it. The pilot project concentrated on developing the data base and the webpage for the project and teaching local people how to manage them.

This Thai project was conducted along with similar projects in Nepal and the Republic of the Philippines to pilot-test materials associated with the academic teaching strategy called engaged learning (also called service-learning) [1]. Engaged learning emphasizes students taking their credit-based university learning into the practical world outside the university to help local people meet some of their development needs. The students then reflect (learn) from the intersection of community and university. Those pilot projects were supported by the UNs Asia and Pacific Training Centre for Information and Communication Technology for Development (APCICT) as part of its Turning Today's Youth into Tomorrow's Leaders' programme [2] which has now added engaged learning materials to its resources for universities interested in applying ICTs for development.

While the pilot projects yielded no statistical results to excite a researcher, there are generalizations about engaged learning in a university's academic programme that invite attention. One is that engaged learning demands more active participation by all parties than is often evident in traditional courses where students are fed knowledge by an instructor. In engaged learning, students are *active* and they gain a sense of civic responsibility in their engagement with communities.

The pilot projects demonstrated that university students can assist people in the community in a variety of ways to help those people make constructive use of ICTs and digital connectivity. These range from showing them how to access development-related web pages to using various lifelong learning resources, sending emails, and collecting and digitally storing local history.

Another generalization is that the process can excite faculty, students and members of the community through the building of partnerships and teams. In Thailand, for example, this was the first engaged learning experience for third year computer science students at MSU, and subsequently they themselves planned another community project named "C4C-Computer for Community" that would focus on teaching computer technology to villagers.

And while other kinds of student off-campus field activity may be valuable, the engaged learning strategy – in the context of a credit-bearing course and adopting the framework of pre-engagement, engagement and post engagement activities – provides a strong systematic academic tool that links the classroom learning with the real world outside. The teamwork between the university and the community in Thailand resulted in learning benefits for all partners.

A dynamic ICTD model for social change and development in Asia

In this and the other pilot project sites, we obtained strong support for the conclusion that this is a valuable model for a major effort throughout Asia and the Pacific. The model can be used to support community development and several specific Sustainable Development Goals. The model links community learning centres, university students with ICT skills, and the university academic programme in a partnership in which all partners benefit. Our conclusion is significant because of three movements taking place in Asia.

● Movement One: the extraordinary spread of information and communication technologies throughout the world and the recognition that they are related to development. Consider where we are today. We have approximately:

> 3.5 billion internet users   7 billion cell phone users   95 thousand village radio sets in use

And millions of people are using social media in their everyday lives.

Major international agencies from the World Bank to the World Health Organization have recognized the potential of ICTs for development. A major thrust came from the G-8 nations declaring in 2000 that ICTs can be among the most important forces shaping the 21st century. [3] Some 160 countries have adopted ICT strategies. The Action Plan of the World Summit on the Information Society in 2003 suggested creating a critical mass of skilled ICT professionals and experts dedicated to development-related issues and institutions [4]. Now more than a decade later, that need can only grow as the United Nations has laid out its new listing of Sustainable Development Goals. APCICT's efforts to provide ICTD orientation and training for current and future leaders in Asia and the Pacific Region reflect the importance of this movement.

● Movement Two: the importance of increasing the relevance of universities. The Asia-Pacific Programme of Educational Innovation for Development (APEID) at its 11th annual meeting in Bangkok in 2007 organized a programme titled Reinventing Universities: Toward Participatory and Sustainable Development. [5] This and other similar forums have touched on a wide range of issues related to the culture of universities but an underlying theme has been the need for universities and other higher education institutions throughout the world to give more priority to reaching out and supporting development in their nations. Academic strategies such as engaged learning are steps toward building this relevance.

● Movement Three: the evolution of community learning centres and now the move toward their connectivity. [6] Nations throughout Asia have created community learning centres (CLCs). The surge in the past decade has resulted, in part, from UNESCO's Asia and Pacific Programme of Education for All (APPEAL) and the emphasis on lifelong learning. [7] There may be as many as 170,000 CLCs in the Asia-Pacific Region. It is important to note that these CLCs – with their commitment to non-formal education, lifelong learning, development and a priority on *connectivity* – are potentially valuable partners for ICTD engaged learning programmes in Asian universities.

The Sustainable Development Goals and the digital world

These various strategies and pilot projects that link university academic courses with ICTs and community development help in determining how to set the stage for taking further initiatives toward *institutionalizing* this approach to engaged learning, ICTs and community development, and for reaching international priorities realted to health, lifelong learning, and ecomonic development. The 17 SDGs adopted in early 2016 by most of the world's nations suggest important directions.

Goal 3 relates particularly to healthy lives and well-being. Communication has a significant role in reaching this goal, inasmuch as awareness, knowledge, skills, and motivation play an important part in identifying and treating health problems.

Goal 4 is particularly relevant to introducing courses in development communication and engaged learning at universities that are interested in attaching more reality to some of their academic courses. Goal 4 is to increase the number of youth and adults who have "relevant skills" that will help nations and communities reach the SDGs by 2030. It includes an emphasis on lifelong learning. UNESCO's emphasis on connectivity provides a potential source for important grassroots partnerships in an engaged-learning-and-ICTD movement and an opportunity to build those relevant skills.

Goal 5 emphasizes the importance of gender equality. APCICT's Women and ICT Frontier Initiative ((WIFI) supports Goal 5 through its focus on ICT-enabled women's entrepreneurship. This involves supporting women entrepreneurs by strengthening their capacity to use ICTs in support of their businesses.

Directions for future researchers and collaborations

What needs to be done to step forward and expand and institutionalize the potential power of university students, community learning center partners, and ICTs for development? APCICT has already made

major progress through its Turning Today's Youth into Tomorrow's Leaders' programme which reaches out to universities throughout Asia and the Pacific with ICTD learning resources for students and faculty. In one of its recent internal documents APCICT laid out its position regarding future success of ICTD engaged learning. To advance the engaged learning ICTD strategy elsewhere in Asia, it suggests:

● Encouraging partnerships between universities and community learning centres, telecentres, and government and non-government agencies that can provide development-oriented partners for engaged learning ICTD university courses
● Providing resources to Asia-Pacific universities to sustain and *institutionalize* an engaged learning ICTD culture in the academic curriculum that encompasses both teaching and research.

UNESCO/Bangkok is leading an effort to have learning centres gain connectivity capacity. An important challenge is to address the question: *connectivity for what*? And *how*? This is where orchestrating partnerships of universities that have computer and ICTD engaged learning academic strategies with CLCs that have a connectivity priority can have dramatic impact.The university partners can help CLCs make constructive use of their connectivity.

Other international bodies that could contribute to this effort include UN University's Computing and Society (UNU-CS) programme in Macao. UNU's focus is on the key challenges faced by developing societies through high-impact innovations in computing and information technologies. There is also the Institute for Lifelong Learning in Hamburg, Germany that undertakes research, capacity-building, networking and publication on lifelong learning with a focus on adult and continuing education, literacy and non-formal basic education.

Another potentially valuable partner in a future collaboration is a programme initiated by Korea's National Information Agency. Joined by the International Telecommunication Union (ITU), the Agency created International ICT Volunteers in 2013 with its theme Empowering Youth in ICT for Development.

Weaving together programmatic and intellectual resources of these and other bodies such as non-governmental organizations could make an enormous impact on grassroots development and empowerment.

Here is an approach that builds on this potential. Organize an ambitious multi-year demonstration project involving Asian universities and community learning centres – *with ICTs for lifelong learning and community development as a driving theme*. Obviously lifelong learning can include health issues, skills development (including ICT skills), basic education, elements of the SDGs, and the priorities identified by partner communities. The project would guide and support the establishment of partnerships involving universities' ICT-related academic programmes and community learning centres and telecentres. The project could enlist perhaps 15-20 universities from 8 to 10 countries in the region as participants.

Among the tasks necessary to get started are the following:
• convince university administrations on the value of adopting an engaged learning academic strategy;

• motivate and orient instructors and professors to adapt development communication-related and computer science courses to the engaged learning model;

• design a research programme that will document the various adaptations of the engaged learning ICTD model by participating universities and community learning centres, and measure the impact of the overall initiative;

• identify the ICT needs of universities and potential community partners (items such as computers and mobiles) and attract appropriate equipment donations, and obtain funding to support the administration, start-up expenses, and research on the project;

• develop guidelines and models to help students themselves design learning strategies related to such issues as health, women's entrepreneurship, employing ICTs in agricultural development, and using social media constrictively – strategies that they can bring to the partner community.

Conclusion

We close with a very brief picture of how some basic computer science training in a learning centre influenced the life of a woman entrepreneur. Varshaben Luva is one of a growing number of women in India breaking through traditional gender roles by starting her own business. Although a farmer, she attended the Self Employed Women's Association (SEWA) in India that has trained some five thousand women workers from rural areas in core computer skills to help them find jobs, become self-reliant, and overcome traditional gender-associated constraints.

Luva's story begins on a dusty road in India. Luva dreaded the 100-mile drives to the marketplace to sell her crop. The long trips were not only exhausting but often resulted in a financial loss when she could not sell her crop in the market. Other farmers experienced the same difficulty and frustrations – and losses. After attending the computer training session, Luva was able to combine her new information technology skills with her background in agriculture to start her own text messaging business for farmers. Luva now goes to SEWA on a daily basis to do online research of markets and prices of commodities. Then she sends daily text messages about current market prices to farmers who pay her 50 rupees (approximately US$1) a month for her service.

There was not an obvious need for her ICT market information business, but apparently her training in the community learning centre inspired the innovation. It is a scenario and outcome that could be duplicated around Asia with the involvement, skills, guidance and inspiration of university students.

Finally, in an age of digital explosions, university students from various disciplines – while learning for themselves – can help open up a new world of digital communication for local leaders and citizens in under-served areas of Asia and the Pacific.

References

[1] An introduction to the engaged learning academic strategy can be found at:. R. Colle, *Engaged Learning Toolkit for Faculty, Using ICTs for Community Development*, UN-APCICT (2016). See: file:///C:/Users/Royal/AppData/Local/Temp/970.%20EngagedLearning-Guidebook-FINAL_16June2016.pdf.

[2] For a more detailed report on the three pilot projects, see S. Butdisuwan, M. Chico, R. Colle, M. Moscosco and D. Shresth, Engaged learning and ICTD in university courses: Three case studies, *The J. of Development Comm*. 27:2 (December 2016).

[3] For a brief review of international agencies' positions on the importance of information and communication technologies for development, see Colle (2016), pp. 15-16.

[4] Item C4e of the *Action* Plan says: "*Governments, in cooperation with other stakeholders, should create programmes for capacity building with an emphasis on creating a critical mass of qualified and skilled ICT professionals and experts*." The whole Plan of Action is available at: http://www.itu.int/wsis/docs/geneva/official/poa.html.

[5] See http://www.unescobkk.org/education/apeid/apeid-international-conference/11apeidconf/.

[6] This priority was identified in the Conference Background document for the Changwon/UNESCO Asia-Pacific Regional Education Conference 2016.

[7] APPEAL is a regional programme designed to promote literacy, early childhood care and lifelong learning. See: http://www.unescobkk.org/education/appeal/.

[8] See the Nepal profile at: http://www.unesco.org/uil/litbase/?menu=4&programme=80.