Engaged Learning Toolkit for Faculty

Using ICTs for Community Development

United Nations
Asian and Pacific
Training Centre for
ICT for Development
(UN-APCICT)

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Engaged Learning Toolkit for Faculty:

Using ICTs for Community Development

Lead Author:
Professor Royal D. Colle
Cornell University

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ASIAN AND PACIFIC TRAINING CENTRE FOR INFORMATION AND COMMUNICATION TECHNOLOGY FOR DEVELOPMENT

Engaged Learning Toolkit for Faculty: Using ICT for Community Development

United Nations Asian and Pacific Training Centre for Information and Communication Technology for Development (UN-APCICT/ESCAP)
5th Floor G-Tower, 175 Art center-dearo, Yeonsu-gu, Incheon City
Republic of Korea

Tel: +82 32 458 6650
Fax: +82 32 458 6691
Email: info@unapcict.org
http://www.unapcict.org

Design and Layout: JIEUM Design
Cover photo: Dr. Royal Colle and ASEAN Interns at the 2013 APCICT Primer Partners Meeting
Printed in: Republic of Korea

About Engaged Learning Toolkit for Faculty: Using ICT for Community Development

Engaged Learning is a pedagogical strategy that links classroom learning with community development practices within a credit-based university curriculum. For students who are learning about the field of information and communication technology for development (ICTD), engaged learning can be an effective approach to provide them with practical experiences in helping local communities through ICT-based innovation.

To advocate the engaged learning across the Asia-Pacific region, APCICT has prepared two set of publications: the "Engaged Learning Toolkit for Faculty: Using ICT for Community Development" and the "Engaged Learning Guidebook for Students: Using ICT for Community Development", in collaboration with Cornell University. The Toolkit and Guidebook provide practical guidance for faculty members, students, communities and other stakeholders on planning, implementing and evaluating the ICTD-based engaged learning courses.

The Engaged Learning initiative is a part of APCICT's "Turning Today's Youth into Tomorrow's Leaders" Programme. Launched in 2012, the programme intends to create a cadre of future leaders equipped with knowledge and skills needed for utilizing ICT innovation for sustainable development. Under this programme, APCICT provides "Primer Series on ICTD for Youth (Primer Series)", a comprehensive ICTD curriculum that serves as practical and valuable learning resources for colleges and universities in Asia and the Pacific. The Primer Series are increasingly being integrated in academic curricula, helping to expand the coverage of ICTD in university education in the region.

APCICT hopes that, through the Engaged Learning Toolkit and Guidebook, faculty members and students can enhance their ICTD education and make positive changes within their communities while contributing to sustainable development in the Asia-Pacific region.

ABOUT APCICT

Established in June 2006 as a regional institute of the United Nations Economic and Social Commission for Asia and the Pacific (UN-ESCAP), APCICT has a principal mission of building the human and institutional capacities on utilizing ICT for sustainable development. The Centre develops and implements ICT capacity development programmes and services for government leaders, civil servants, students, educators and women entrepreneurs in Asia and the Pacific. Its core activities surround three pillars: training, research/knowledge sharing and advisory services. As a regional hub on ICT capacity development, the Centre also provides a platform for regional and multi-stakeholder dialogues, networking and cooperation on ICTD capacity building in the Asia-Pacific region.

Acknowledgement

APCICT would like to specially acknowledge the author, Dr. Royal Donald Colle (Professor Emeritus, Department of Communication, Cornell University) for his invaluable contribution.

The Centre would like to thank its partners in the region for the Primer Series on ICTD for Youth for its continued support and engagement in this initiative. APCICT also appreciates the inputs, comments and suggestions from individuals who participated in the Expert Group Meeting in August 2015 as well as Dr. Stephan Chan and Dr. Grace Ngai at Hong Kong Polytechnic University; Dr. Anna Bartel, Corrie Young, and David Torres at Cornell University. Special thanks extend to APCICT's university partners who participated in field-testing of the Engaged Learning Toolkit and Guidebook, including Prof. Sujin Butdisuwan and the faculty members at Mahasarakham University (Department of Informatics), Profs. Mildred O. Moscoso, Mark Lester Chico and Maria Theresa Velasco of the University of the Philippines Los Baños (Department of Development Communications), Mr. Dhiraj Shrestha of Kathmandu University (Department of Computer Science and Engineering) and their students who participated in the engaged learning coursework using our Toolkit and Guidebook.

The Engaged Learning initiative and related activities were made possible through the generous support of the Government of the Republic of Korea.

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Section 1 Introducing the Engaged Learning Toolkit

1.1. An innovation: Engaged learning and ICTD in universities

The last two decades have witnessed the growth of two important movements related to international development. The first has been the increasing realization that higher education institutions could have a greater positive impact on society by addressing more directly the realities of the world around them. Although some institutions contribute well to science, the arts and technology, there is a growing need for them to be more in touch with cities, rural areas and communities where millions struggle for healthier, safer, more economically productive and happier lives. In response, some universities around the world are adopting innovative approaches to teaching and learning to make them more relevant to society. One of these approaches is engaged learning where students extend their learning environment beyond the classroom by engaging in the communities around them or across the world, and bring benefits to those communities and to themselves.

The second movement has been the extraordinary emergence of new ways to communicate, made possible by discoveries and inventions in information and communication technology (ICT) that take us well beyond the printed word, radio and television of earlier decades. This movement has brought us a world where a rural woman in India can use a computer and a mobile phone each day to collect information on crop prices in the surrounding markets and share this information with other farmers. We have a communication environment of over three billion Internet users and a world where 65 million or more "tweets" travel through space every day (or 750 tweets per second). Through engaged learning, students can help people and organizations use these technologies constructively in their communities, and position those students to take leadership roles in using ICT for development (ICTD). Engaged learning will expand the students' ICTD experience beyond the classroom and into the "real world". This toolkit can help you add the engaged learning teaching method to various ICTD–related courses including sociology, education, computer science and agriculture, and to traditional communication and development courses.

1.2. The focus and use of the toolkit

This toolkit is designed for university faculty members who will lead students (usually in teams) in a credit-bearing engaged learning course about ICTD. It should be used in conjunction with the APCICT Engaged Learning Guidebook for Students. This toolkit does not cover the full range of ICT applications found in the ICTD literature such as using ICTs to share data between health organizations or special situations such as radio spectrum management. It focuses specifically on community development. And while it could be applied in other situations, the toolkit focuses especially on partnering with community learning centres (CLCs) and telecentres.

This toolkit provides links to APCICT's Primer Series on ICTD for Youth (Primer Series) publications[1] that evolved from APCICT's Turning Today's Youth into Tomorrow's Leaders programme. The programme's support materials have been rolled out in 14 countries throughout the region, including Azerbaijan, Cambodia, China, India, Indonesia, Kazakhstan, Kyrgyzstan, Maldives, Mongolia, Nepal, the Philippines, Sri Lanka, Tajikistan and Uzbekistan.

In the text, specific places where the Primer Series publications would be helpful in exploring further issues raised in the toolkit will be pointed out. In regard to the ICTD engaged learning process, APCICT's Primer 1: An Introduction to ICT for Development and Primer 2: Project Management and ICTD are particularly valuable tools. These Primers provide materials that will be useful in conjunction with this toolkit. In this toolkit, you will also find a variety of additional tools that can be used in your course. These are:

[1] Go to http://www.unapcict.org/pr to access APCICT's Primer Series on ICTD for Youth.

- **Case studies** about ICTD applications in a variety of contexts. But there is also the strong invitation for you to add case studies from your own country or develop fictional ones that contribute to the course's learning objectives. Appendix D includes resources specifically focused on case studies and ICTD. It is important to note that not all case studies end up with solutions. Some are open–ended and invite students to contribute possible scenarios.

- **Actions** you can take especially in the classroom to promote students' reflection and research activities that support their learning. There are 15 Actions included in this toolkit; you surely can add more.

- **Background sections** that remind you of issues that are important in understanding the key ingredients of ICTD and engaged learning. These include, for example, items on engaged learning as a teaching strategy, the rise of ICTD as a major tool in achieving the Sustainable Development Goals (SDGs), and the importance of communities and CLCs as ICTD engaged learning partners.

- **Appendices** that include details on topics mentioned in the text such as "reflection", and links to excellent sources on ICTD and engaged learning, as well as guidance on conducting assessments, making contracts with communities, etc. Appendix C provides links to other faculty handbooks that deal with various details associated with engaged learning.

The toolkit and these resources related to ICTD engaged learning can help you provide students with the opportunity to:

- Apply classroom learning about ICTD to realities they encounter in a community engagement
- Develop their civic responsibility
- Make contributions to the welfare of the community and vulnerable populations

An essential part of engaged learning is that there are benefits for the students and benefits for the community. The model for this interaction uses three sequential steps or phases: pre-engagement, engagement and post-engagement.[2] This toolkit includes ideas for learning activities and teaching tools that can be used during these pre-engagement, engagement and post-engagement parts of an ICTD engaged learning course. Your engaged learning activity can be a stand-alone credit course or be part of a course such as computer science, education, extension, communication, rural sociology, or other courses related to development.

Process of Engaged Learning Programme

[2] There are other engaged learning models such as those that place engagement alongside pre-engagement in a single semester. You can explore these and other useful topics related to engaged learning in Campus Compact, http://compact.org/initiatives/engaged-learning/.

1.3. The limited scope of the toolkit

Items that the toolkit does not address include the following:

- Recruiting students
- Administrative details related to travel expenses
- Insurance issues
- Accommodations arrangements in the field
- Faculty compensation
- Awards

Typically, these are unique to individual institutions. As indicated earlier, Appendix C provides a list of faculty handbooks from other universities and often they show how these universities address some of these issues. There is also a collection of resources available online that can offer ideas that are not necessarily ICTD–related but they can be helpful in designing and carrying out the engaged learning course. Some of these are listed in Appendix E.

This toolkit should be considered as suggestions for carrying out an ICTD engaged learning course. You can be active in adapting it to your own professional background and to the university culture in which you teach. Take the opportunity to add to or re–shape the toolkit to suit you and your students' needs.

Section 2 Reviewing Engaged Learning

2.1. What is engaged learning?

The SDGs that have become effective since January 2016 highlight important priorities for communiction and development. Among the 17 goals specified by the SDG, Goal 4 is particularly relevant to this course on ICTD engaged learning. Goal 4 states that we need to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" and its targets emphasize the importance of increasing the number of youth and adults that have relevant skills needed for achieving the SDGs.

Engaged learning is a teaching and learning strategy that integrates meaningful community engagement with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities. Communities all around Asia and the Pacific need lifelong skills, and many need the skills alluded to in Goal 4. Engaged learning in universities is an approach that places students with ICTD skills as strategic players in reaching Goal 4 and others among the SDGs. Engaged learning involves a credit-bearing university course. Sometimes "service-learning" is used as a label for this approach. University courses that have ICTD as a significant component can provide a valuable and practical dimension to students' educational experience by adding engaged learning to the course.

You may already have been introduced to or used engaged learning in which students apply their classroom learning to the needs existing in the community. It is important that not only do students benefit from engaged learning and ICTD, but that communities also benefit. In Appendix C there is reference to two university faculty publications available to you online that provide additional details on the characteristics of engaged learning. You can use these in conjunction with this toolkit.

2.2. The principles in engaged learning

Before exploring the application of engaged learning to ICTD, this section reviews and summarizes some of the key ideas in the engaged learning approach that serve as guidelines in developing ICTD learning activities for both students and communities. These guidelines come from the work of others who have had substantial experience with engaged learning. You can read about this accumulated wisdom in more detail in publications available through the Internet. Some appear in the Appendices in this publication. See especially the resources available through Campus Compact.[3]

Teaching Tool 1 lists 10 points that are at the heart of engaged learning.

[3] See http://compact.org/resources-for-faculty/.

Teaching Tool 1:
Ten things to remember when practising engaged learning

1. Engaged learning involves a partnership between the university and a community organization.
2. An engaged learning course provides benefits for both the students and the community partner.
3. Engaged learning responds to needs as defined by the community.
4. Engaged learning is, or is linked with, a credit-bearing course.
5. In engaged learning, students learn academic content and develop stronger civic consciousness.
6. An engaged learning course often has three phases: pre-engagement, engagement, and post-engagement.
7. Reflection is a major part of the learning process and takes place throughout the course.
8. Engaged learning is often a group activity usually involving students in teams.
9. The length of engagement with the community is variable, but some engagements can be accomplished in as short a period as one week in the field.[4]
10. Engaged learning can be designed so that the outcomes are sustainable over multiple years.

[4] G. Ngai and S.C.F. Chan, "How much impact can be made in a week? Designing effective international engaged-learning projects for computing", Proceedings of the 46th ACM Technical Symposium on Computer Science Education.

2.3. Engaged learning has many benefits

Why do engaged learning? Case studies and the literature surrounding engaged learning testify to a variety of benefits to students, instructors/professors, institutions and communities.

▶ For faculty members

- Greater faculty satisfaction with the dynamics and impact of their teaching
- Opportunity for faculty to develop research projects
- Faculty's closer involvement with real world situations
- Faculty's closer involvement with the students' learning

▶ For community members

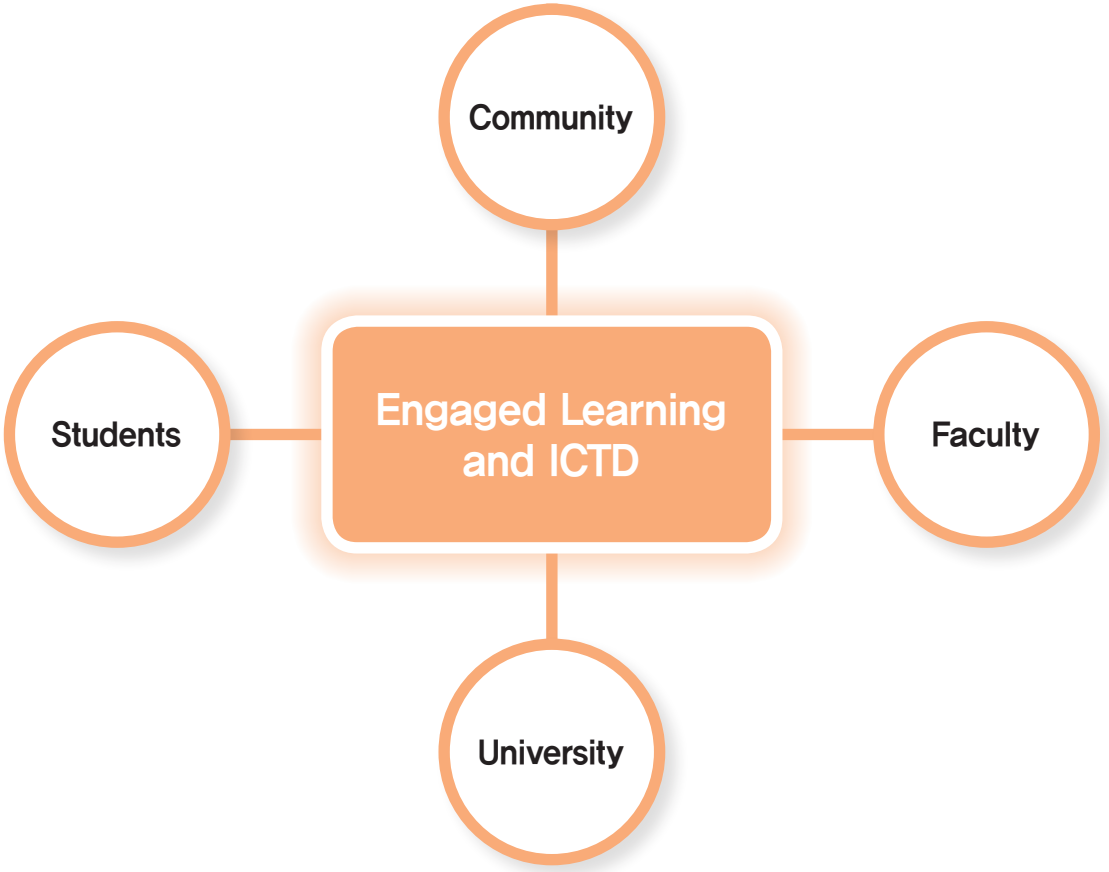
- Having students introduce ICTs to members of the community as a way of gaining information, non–formal education, new skills and lifelong learning
- Having students collaborate with schools in the community to expand the schools' learning resources
- Having students work with local institutions to upgrade their information and communication systems
- Having students help citizens increase their capability to communicate with others through such innovations as social media

▶ For students

- Gain a richer ICTD learning experience and a step toward a postgraduate career
- Gain experience and confidence in applying their learning to a "real" world
- Gain a sharper understanding of civic involvement

For universities

- Strengthen their relevance to the world around them
- Build a broader learning and research environment for students and faculty



2.4. The challenges in engaged learning

The challenge to you as a faculty member is much greater than conducting an ordinary course in the university classroom. It is widely accepted that an engaged learning course demands a commitment of faculty and students beyond the traditional university course. It is greater than supervising internships or "study abroad". It involves committing time to an array of administrative details in the university. Your role as an instructor may change: the routine of two or three classroom lectures per week in a course may change to more student participation, and sharing responsibility with students for their learning. In addition, there is sometimes the issue of deciding between doing research and leading an engaged learning course that may consume several semesters and "break" time in the academic year. You may find grading a bit more complicated in engaged learning than in a typical university course where, in the latter, you may be able to add up the scores of three exams and calculate a grade. Journals, reflection papers, community feedback and various other reflection activities may need to be evaluated and graded (see Appendix E–2 for suggestions on dealing with this). Sometimes the question arises about how being involved in an engaged learning process affects promotion and tenure decisions. Learning about a partnership community, coordinating with members of that community, perhaps maintaining relationships over a long period of time, and making it a real partnership can be interesting, but all these demand time, attention and effort. In ICTD engaged learning projects done by the Hong Kong Polytechnic University, faculty members spend considerable time in the field negotiating, monitoring and supervising.

Dr. Grace Ngai, Hong Kong Polytechnic University's Associate Director of the Office of Service-Learning, identifies some challenges for faculty members and implies some strategies:

> *They need to understand the concept of reciprocity. Too often our colleagues focus on the learning outcomes of the students, but service-learning [or engaged learning] calls for equal benefit to the clients. They need to understand risk management, both with respect to the project deliverables and to student management. The first because we cannot deliver a shoddy job, but students are often not aware that there is a huge gap between delivering a class project and building a real product for use by real people. We need to ensure that (1) our students do not come to harm, and (2) they do not cause any harm to the community members. We are intervening in a community and there will always be some impact. Faculty needs to understand and be comfortable with the concept of facilitating learning through experience and reflection. As academics we are very good at delivering knowledge-talking "at" the students and expecting them to follow; we are less good at following their thoughts and guiding them to come around to what we wish them to learn.*

For the community, a challenge may lie in the possible changing relationships in the community because of who the teachers and learners are (the community may be both), the necessity of obtaining ICT resources such as computers and connectivity, and the introduction of new responsibilities to maintain and sustain ICTD–related changes and equipment brought about by the community's engagement with your students. You may need to allay some apprehensions in the community related to "outside influences"–such as a perception that the university is interfering in the community. Building a collaborative partnership is vital.

The challenges are there, but rewards are also there. Those rewards include the satisfaction of having a greater impact on learning than would happen in an ordinary classroom, and the satisfaction in making a significant contribution to a community's welfare and to achieving international development goals, including the SDGs.

Section 3 Embracing ICTs and Engaged Learning in Community Development

This section adds to APCICT's Primer Series by reviewing the emergence of ICTD on the international agenda. This background, which you can expand in your own classroom lectures and discussions, provides the context for the future engaged learning experience of the students. Appendix D provides additional resources on ICTD.

3.1. The evolution of ICTs in development

Since the early 1990s, there has been widespread recognition of the increasing importance of ICTs in the everyday lives of people across the world. A major push toward recognizing the great potential of these ICT initiatives came from the eight major industrial nations (the G–8) who asserted in the year 2000 that ICTs can be among the most potent forces in shaping the 21st century. The G–8 noted that the revolutionary impact of ICTs affects the way people live, learn and work, and the way government interacts with civil society. This made ICTs a significant international priority.

Then later, a further impetus was the two–phase *World Summit on the Information Society* (WSIS) in Geneva in December 2003 and in Tunis in November 2005. These meetings prompted many international organizations to come forward with ideas, plans and programmes for using ICTs to meet the Millennium Development Goals (MDGs) that were targeted for 2015 and preceded the SDGs. Note especially the stocktaking process organized by the International Telecommunication Union that provided examples of

how ICTs have been used to achieve the MDGs.[5] *WSIS Stocktaking* was launched in October 2004 and continues today. Recently, 17 organizations were awarded prizes in recognition of their outstanding contribution towards strengthening the implementation of the initiative called *Outcomes of the World Summit on the Information Society.*

The importance of ICTs in development was further revealed in publications available on the Internet. Note, for example, two major publications from the World Bank–*Maximizing Mobiles*[6] and *ICT in Agriculture: Connecting Smallholders to Knowledge, Networks and Institutions*[7]–sections of which can be assigned to students for reading and reporting back to the class. They contain many good ICTD–related case studies. The second reference just mentioned is a 400–page source book aimed at helping practitioners and policymakers take maximum advantage of ICTs' potential for improving agricultural productivity and smallholders' income.

Another valuable resource is a publication of the United Nations Educational, Scientific and Cultural Organization (UNESCO) entitled, *Harnessing the Potential of ICTs*[8] published in 2016. It provides case studies in Asia and the Pacific as well as some from Africa, the Arab States, Latin America and the Caribbean, Europe and North America. These cases describe literacy and numeracy programmes using radio, television, mobile phones, tablets and computers.

These materials provide good resources for students focusing on the uses of ICT in various development contexts. The APCICT's Primer Series 1 can be useful in finding other relevant case studies.[9] See also Appendix D for more case studies.

5 International Telecommunication Union, WSIS stocktaking: Success stories 2014 (Geneva, 2014). Available from http://www.itu.int/pub/S–POL–WSIS.SUCC_STORIES–2014/en. See also David J. Grimshaw and Shalini Kala (eds.), Strengthening Rural Livelihoods: The impact of information and communication technologies in Asia (Ontario, International Development Research Centre, 2012).

6 Available from http://hdl.handle.net/10625/45947.
World Bank, Information and communication technologies for development 2012: Maximizing mobiles (Washington, D.C., 2012). Available from http://www.e–agriculture.org/news/world–bank–ic4d–report–2012–maximizing–mobile.

7 World Bank, ICT in Agriculture Sourcebook: Connecting Smallholders to Knowledge, Networks and Institutions, Report 64605, 2011. Available from http://www.ictinagriculture.org/content/ict–agriculture–sourcebook.

8 Available from http://unesdoc.unesco.org/images/0024/002439/243981E.pdf.

9 In Appendix B.1 of the Engaged Learning Guidebook for Students, there is a list of 26 case studies from APCICT's Primer Series 1.

Action 1

Examining ICTD case studies

Have teams of students select and summarize an ICTD case from the resources mentioned above. Have them state why and how (or why not) this particular case or application of ICTs is relevant to this country. What is the development problem in the case?

3.2. The need to educate youth as ICTD specialists

These developments have implications for you and your students. What is the future role of the ICTD specialist and the future leaders being trained in your engaged learning course? More than 160 countries and territories have created strategies to promote the use of ICTs for development. To have a successful ICT intervention requires skillful communication planners and strategists. The WSIS Plan of Action called for creating a critical mass of skilled ICT professionals and experts dedicated to development–related issues and institutions.[10] The need can only grow as Member States of the United Nations adopt the SDGs. This toolkit will return to the SDGs several times, and the SDGs appear significantly in the Engaged Learning Guidebook for Students. You can review the SDGs in Appendix A where you will find references for further discussion of them. It is very likely that, as the MDGs stimulated the acceptance of ICTs as tools for development more than a decade ago, the SDGs will require aggressive and strategic applications of ICTs for development.

[10] Item C4e of the WSIS Plan of Action states: "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 complete WSIS Plan of Action is available from http://www.itu.int/wsis/docs/geneva/official/poa.html.

You can invite your students to speculate on the potential roles of ICTs in reaching some of the new goals. Consider linking your discussion of the SDGs with Reflection Tasks 4 and 5 that appear in the Engaged Learning Guidebook for Students.[11] But first, it is important to review the concept of reflection, and then for you to orient students about the importance of reflection. Appendix B includes a comprehensive introduction to reflection. Below in paraphrase is a preview of that material.

Structured reflection refers to a thoughtfully constructed process that challenges and guides students in: (1) examining critical issues related to their engaged learning project; (2) connecting the engaged learning experience to coursework; (3) enhancing the development of civic skills and values; and (4) assisting students in finding personal relevance in the work.

A vital goal of reflection is to help students make connections between the engaged learning activity and the classroom instruction. Reflection can be used to help students understand how to apply course knowledge to engaged learning projects, and to link the engaged learning experience back to coursework. By incorporating such reflection, students get a deeper understanding of course material.

[11] Appendix B provides discussion and details about how you can foster students' reflection. It is essential for you to read this because of the central importance of reflection in the engaged learning process. This toolkit provides some suggestions for students' reflection; you can contribute more based on your ICTD engaged learning course. Also, review the 13 Reflection Tasks in the Engaged Learning Guidebook for Students to see which might be incorporated into your course planning.

You should provide numerous opportunities for reflection before, during and after the engagement. The role of reflection varies according to the stage of the project. Reflection before the project can be used to prepare students for the engaged learning experience. Reflection as part of preparation is important to the effectiveness of engaged learning. At this stage, reflection can be used to teach students concepts required for the project. Reflection can sharpen their perceptions about the community partnership and its partner's needs. And it offers students problem–solving skills to address the challenges that will arise in the community setting. During the project and after, you can use reflection to encourage students to learn independently while providing feedback and support as needed to enhance their learning.

To summarize, reflection offers faculty an opportunity to reinforce the connection of course content with the engaged learning experience. Now, here are Reflection Tasks 4 and 5 found in the Engaged Learning Guidebook for Students.

Reflection Task 4

Applying ICTD to the SDGs

Go to Appendix A and study the SDGs. Pick one of these and imagine how communication and ICTs might be employed to help achieve the goal. Suggestion: Look particularly at Goals 2, 3 and 4. You can develop your own scenario.

Reflection Task 5

You, ICTD and the SDGs, Part 1

Referring to Reflection Task 4, what roles in this might you play in the future? What additional training and skills might you need? If you have started a journal, write how you see the future for yourself as a communication specialist in a development programme.

The first case study brings together some of these issues. This is a case from India and it shows the potential of ICTD and the empowerment of women (see SDG 5). The case is about Luva and how ICTs opened up a new enterprise for her. You can use this case study or one from your own environment to have students think of roles that they might play in such a development situation. Luva's situation illustrates the opportunities and challenges for university students to make more visible to those in a community like Luva's, the potential and the power of ICTD for supporting e–commerce and for providing ICT access for women.

[Case Study 1] THE STORY OF LUVA
How ICTD training helped a young woman entrepreneur from rural India[12]

There is a local community education centre in India that specializes in ICT training, teaching aspiring women entrepreneurs how to use ICTs. One of its collaborating organizations is a local non-profit training organization, the Self-Employed Women's Association (SEWA). SEWA has trained over five thousand women workers and micro-entrepreneurs from rural areas in core computer skills to help them find jobs, become self-reliant, and overcome traditional gender-associated constraints. SEWA's ICT training has benefited the lives of many women and girls, including Varshaben Luva, who comes from the rural village of Kalol in western India.

Luva is one of a growing number of women in India breaking through traditional gender roles by starting her own business. After attending an ICT training session at SEWA, Luva was able to combine her new information technology skills with her background in agriculture to start her own text messaging business aimed at farmers in her geographic area. Luva now goes to SEWA on a daily basis to do online research on markets and on prices of commodities. Then she sends daily text messages about current market prices to those farmers who pay her 50 rupees (approximately USD 1) a month.

Because of Luva's new text messaging business, farmers can now decide whether it is worth transporting their crops-mostly cotton and corn-to a market that day or to wait and deliver them at another time. With 80 or more clients in the Mehsana District of Gujarat State, Luva's business continues to thrive. The case demonstrates that ICT education can make a significant impact on rural women and girls like Luva, who can use their new ICT skills not only to make a living for themselves, but also to have a larger impact in their communities. In Luva's case, there was not an obvious need for her ICT market information business, but apparently her workshop training inspired the innovation.

[12] Based on http://life-global.org/en/LIFE-IN-ACTION/Success-Stories/Luva-provides-market-analyses-for-farmers-in-rural-India.

Reflecting on Luva's e–enterprise

Action 2

Here you can introduce students to another reflection assignment. Have your students suggest and discuss the ways that university students like them might contribute to ICTD learning environments like Luva's. What specific skills would they need? Explore also what other circumstances contributed to her situation before and after her introduction to ICTs.

Case Study 1 will help students focus on some of the specific issues of the SDGs. In the Engaged Learning Guidebook for Students, they are urged to examine the SDGs but you can push them further by pointing out some specific targets that may be relevant to the course. The well–being of women and children is recognized in Goal 5. Targets in the goal suggest actions that can be taken to help empower women. Here are some examples:

5b. Enhance the use of enabling technology, in particular ICT, to promote the empowerment of women

5c. Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels.

You can use Case Study 1 and the reflection activity to introduce the APCICT programme called WIFI (this is not the "WIFI" used in ICT language!) WIFI is the acronym for the Women and ICT Frontier Initiative. APCICT recognizes that while ICTs were universally acknowledged as enabling tools for socio–economic development and for social participation and empowerment, women entrepreneurs faced disadvantages resulting from their lack of access and capacity to use these technologies. In June 2016, APCICT launched WIFI to promote women's entrepreneurship in Asia and the Pacific through ICT capacity building. This issue appears again in Case Study 2 (and in the guidebook for students), and can be woven into your classroom discussions. WIFI's objectives can also be considered in planning your engaged learning field activities.

Section 4 Preparing for Engaged Learning

Before beginning the engaged learning process with students, there are several important steps you need to take. These include identifying community partners and agreeing on their needs that invite ICTD interventions. It is also important to work with the community as a partner in setting the objectives of an ICTD engaged learning plan.

4.1. Identifying community partners

In this toolkit various kinds of community centres are proposed as primary targets for engaged learning partnerships that involve ICTD. This is because nations throughout Asia have created CLCs or telecentres. The surge in the past decade has resulted from many telecentre initiatives including UNESCO's programme called APPEAL.[13] These CLCs are highly development-oriented: providing the surrounding communities with opportunities for non-formal and lifelong education, skills development, and support in small-scale enterprise. For example, CLC programmes in Nepal target out-of-school children, youth and adults from marginalized rural and urban communities. Through various government processes and international funding, Nepal has established more than 800 CLCs and has the ambitious goal of establishing one in every village. As in other countries, nearly all CLCs in Nepal were established and are being managed by the local people. Many CLCs have access to ICTs and are using them. For example, most CLCs in Uzbekistan have programmes devoted to ICT skills development. These range from basic ICT training to advanced website development, depending on the needs of the community.

[13] Education for All is a regional programme of the UNESCO Asia and Pacific designed to promote literacy, early childhood care and lifelong learning. See http://www.unescobkk.org/education/appeal/.

By 2015 there were CLCs in the following Asia–Pacific countries: Bangladesh, Bhutan, Cambodia, China, Fiji, India, Indonesia, Iran, Japan, Kazakhstan, Republic of Korea, Kyrgyz Republic, Lao PDR, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Philippines, Samoa, Sri Lanka, Thailand, Uzbekistan and Viet Nam. There may be as many as 170,000 CLCs across the Asia–Pacific region: some established by governments, some by non–governmental organizations, and most operated by local communities. These CLCs–with their commitment to non–formal education, lifelong learning and development–represent potentially useful partners for university engaged learning programmes. It is also important to note that UNESCO has made connectivity a priority for CLCs in Asia. You and your students can help make that connectivity go beyond accessibility to the media and technology, and help people explore the many uses and advantages of the ICTs.

Other community organizations that have very strong possibilities as engaged learning partners are telecentres. These are similar to cybercafés. But telecentres are development organizations run by local governments or private sector bodies that provide communities with access to ICT resources. These telecentres help people in the community use those resources constructively. There are associations of telecentres throughout Asia and the Pacific, including in the following countries: Afghanistan, Bangladesh, Bhutan, Cambodia, Fiji, India, Maldives, Pakistan, Philippines, Republic of Korea, Sri Lanka and Thailand.[14]

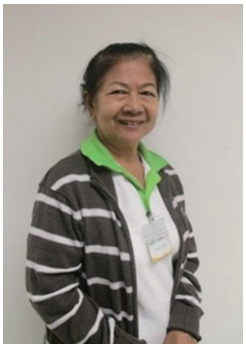
This toolkit focuses especially on you conducting engaged learning in your own country. However, international and global engaged learning courses appear in the curricula of many universities. Doing engaged learning in your own country reduces a variety of problems such as language, travel and transportation issues, and various expenses. Cultural differences can also present challenges to students.

[14] Contacts for them are listed at http://www.telecentre.org/networks/asia–pacific–telecentre–network/.

To summarize, existing community centres (with various titles) provide a good starting place for identifying partners for universities that chose to adopt an engaged learning strategy in an ICTD–related course or other academic programme. The reasons for starting with these as potential partners include the following: (1) there are many in rural areas where the development needs are greatest; (2) they deal with a variety of development issues such as those emphasized by the SDGs; (3) many are in areas where they can support food production; and (4) many are often linked to government policies supporting development.

Engaged learning in ICTD education is a vehicle that can produce various kinds of development and positive social change. If possible, it would be beneficial to have representatives of your community partnership visit the class (after you orient these partners to this learning style) to share their ideas about how students can support the community's needs through ICTD. Case Study 2 can be used to focus a discussion in the classroom about potential partners in a community and connectivity.

[Case Study 2] THE STORY OF MRS. SAIYUD
How an engaged learning programme helped her establish an e-commerce business



You can give your students another example of situations where students like themselves could support the work of a CLC with their ICT skills. This is the case of Mrs. Saiyud in Thailand.[15] Mrs. Saiyud Poolsavasdi, from Bang Phli district, studied until Grade 4 and was then hired as an un-skilled labourer in a sewing factory in Samutprakan province. She was laid off due to bad eyesight and her age.

Mrs. Saiyud became a home-based woman entrepreneur-making doormats. She was invited to visit a local community telecentre where a university student was providing a workshop and individual guidance on how to use a computer and the Internet for e-commerce. Although she did not know anything about computers and the Internet and, in her opinion, those things were for young people, Mrs. Saiyud decided to accept the invitation. After attending the class, she understood the fundamentals of these ICTs. The trainer also introduced her to e-commerce and showed her how to post information and images of her products to a website. She learned well and expanded her business using a website to gain sales from beyond her community. Consequently, a number of customers contacted her for purchasing her doormats. The big turning point came when Tesco Lotus, a big Thai hypermarket chain, contacted her in order to negotiate a long-term contract for purchasing the mats.

Mrs. Saiyud notes: "*We keep learning about how to use ICT for all kinds of business development, and currently we can do all kinds of online business. We can send photos of our products to our customers via the Internet, we can get order without any travel back and forth, we can be more visible because ICT can help us with public relations and advertising…. I am over 50 years old but able to use the computer.*"

In 2016, Mrs. Saiyud was the Chair of the Career Women Groups under the Center for Agricultural Business Development in BangPu community. The main products of the groups are recycled mat and carpet that are sold in Lotus Department Store, and exported to other countries such as China, India, Malaysia and Singapore (but they sell through the middlemen). The groups' other products include bags, picnic mats, artificial flowers, dishwashing liquid and herbal products.

[15] This story is based on a situation reported on the Asian Work-Life Balance Project available from http://www.asean-wlb.net/#!Mrs-Saiyud-Leading-by-Example/i63bh/569eff180cf2ff2c456e6114. It also draws on Worrawan Kalyanamitra in "ICT Telecentre: New model of social development in Thailand", Graduated Volunteer Institute Journal, Thammasat University, January-June 2012. Available from https://www.academia.edu/2005130/ICT_Telecentre_new_model_of_social_development_for_rural_communities_in_Thailand.

Action 3

Focusing students' attention on partners and engaged learning benefits

Discuss the story of Mrs. Saiyud in Case Study 2 with the class[16] and invite students to speculate on what benefits accrued to the university student in this situation. How was the student's learning richer from engaging in the community telecentre than it might have been in the classroom only? How might Mrs. Saiyud's ICTD experience change her life? See Reflection Task 1 in the guidebook for students.

The experiences of other universities using engaged learning provide us with some guidelines for cooperating with partners. The following list in Teaching Tool 2 comes from the health discipline but can be applied to the ICTD engaged learning situation.

[16] A shorter version appears in the Engaged Learning Guidebook for Students.

Teaching Tool 2: Guiding principles for partnerships[17]

The principles listed below were originally prepared for a programme related to health. However, the "principles" can be applied to the ICTD engaged learning process. The "Principles of Partnership" below are not meant to be prescriptive or adopted verbatim but rather to be used for discussion or as a model for developing your own principles of partnership in discussions with a potential partner.

1. The partnership intends to serve a specific purpose and may take on new goals over time.
2. The partnership agrees upon mission, values, goals, measurable outcomes and processes for accountability.
3. The relationship between partners in the partnership is characterized by mutual trust, respect, genuineness and commitment.
4. The partnership builds upon identified strengths and assets, but also works to address needs and increase capacity of all partners.
5. The partnership balances power among partners and enables resources among partners to be shared.
6. Partners make clear and open communication an ongoing priority in the partnership by striving to understand each other's needs and self-interests, and developing a common language.
7. Principles and processes for the partnership are established with the input and agreement of all partners, especially for decision-making and conflict resolution.
8. There is feedback among all stakeholders in the partnership, with the goal of continuously improving the partnership and its outcomes.
9. Partners share the benefits of the partnership's accomplishments.
10. Partnerships can dissolve, and when they do, need to plan a process for closure.
11. Partnerships consider the nature of the environment within which they exist as principle of their design, evaluation and sustainability.
12. The partnership values multiple kinds of knowledge and life experiences.

[17] Community-Campus Partnerships for Health, "Position Statement on Authentic Partnerships: Including Guiding Principles of Partnership". Available from https://ccph.memberclicks.net/principles-of-partnership.

4.2. Specifying learning objectives

In your engaged learning preparation, it is important that you devise learning objectives. The objectives should address development–related objectives proposed by the community partner. Some experts in this field suggest the following characteristics of good learning objectives. They should be:

S – **Specific:** Detailing what is to be accomplished. For example, "to increase the percentage of persons in the community who know how to access the local telecentre."

M – **Measurable**: Indicating how much change is targeted. The change can be in the number or percentage of people adopting an idea or behaviour.

A – **Achievable**: Defining intended changes that are achievable.

R – **Realistic**: Avoiding objectives that are beyond the scope of available resources, contrary to relevant experience, or unrelated to communication efforts.

T – **Time–bound**: Identifying the time frame in which changes should be achieved.

Another way of capturing this idea is to identify learning outcomes. Here are samples drawn from the experience of Hong Kong Polytechnic University that apply particularly to the students.

Sample learning objectives[18]

After the engaged learning experience, students will be able to:

- Apply the knowledge and skills they have acquired to deal with complex issues in the engaged setting
- Reflect on their role and responsibilities both as a professional in their chosen discipline and as a responsible citizen
- Demonstrate empathy for people in need and a strong sense of civic responsibility
- Demonstrate an understanding of the linkage between the academic content of the subject and the needs of society.

The following chart in Teaching Tool 3 is a planning and assessment matrix from Cornell University that can help you organize your thinking and planning about goals and outcomes.[19]

[18] The list is based on S.C.F. Chan and G. Ngai, Service Learning as a Core Academic Component in Undergraduate Programs – A Brief Introduction to the Hong Kong Polytechnic University Model. Paper presented at the USR–SL 2014 International Conference, Hong Kong, 2014.

[19] The chart was provided by Anna Sims Bartel, Associate Director of Cornell University's Engaged Learning and Research Program and the Center for Teaching Excellence.

Teaching Tool 3:
Engaged learning planning and assessment matrix

Project Title : _____

Description : _____

	GOALS/ OUTCOMES	MEASURES	METHODS	RESULTS
	What do we want to achieve?	*How will we know we achieved it?*	*What will we do to achieve it?*	*What will we do with the results of our work and assessment?*
For students:				
For community partners:				
For faculty and researchers:				
For the discipline/ field:				

As you move through the engaged learning process, you will note various activities that students are called upon to do. Many of these relate to reflection, the mechanism for expanding their learning beyond the classroom and contributing to civic awareness. Because each university's grading and evaluation system is unique, this toolkit does not provide a formula for evaluating these activities for the purpose of awarding a final grade in the course. Evaluation methods and assigning grades are often part of a professor's own teaching style and the systems may differ between universities in different countries. However, the references in Appendix E–2 can help. You will need to alert students at the beginning of the course about how their activities will be evaluated.

Section 5 The Engaged Learning Process

In the Engaged Learning Guidebook for Students, students are given a glimpse of the three phases of engaged learning by reading about a situation in north–east Thailand where Mahasarakham University developed a partnership with a community to build a museum with an ICT component. In the guidebook for students, the case is presented in three different sections of the text–corresponding to where pre–engagement, engagement and post–engagement are discussed. Below, all the sections of the engaged learning project at Mahasarakham University are presented together. The Box numbers are included as they appear in the guidebook for students.

[CASE STUDY 3–A]
PRE–ENGAGEMENT AT MAHASARAKHAM UNIVERSITY

Students in the engaged learning project used an early draft copy of the guidebook to learn the basics of the engaged learning process. Students and lecturers from the Faculty of Informatics at Mahasarakham University were partners with local governments and the community. The university discovered that Ku San Tarat village, located in north–east Thailand, contains many antiques that represent Khmer art. The village and local government wanted to preserve these. Through interviews, focus groups and site visits, the university team and the community recognized the need to develop a database for collecting and organizing a collection for a local museum that would attract tourists to the area. In addition, the project team, consisting of about 100 students and 10 university lecturers, needed to learn from the Faculty of Cultural Science details about Khmer art. These activities were a major part of the pre–engagement phase of this project.

[CASE STUDY 3–B]
ENGAGEMENT AT MAHASARAKHAM UNIVERSITY

The students organized into teams. For example, one team of 10 students designed and developed the website, others collected specimens, another team took pictures and videos, a team worked on data entry, and others collected background information for documentation. An important part of the interaction with the community was teaching local students and other members of the community ICTs skills so that they could pass these skills on to others.

[CASE STUDY 3–C]
POST–ENGAGEMENT AT MAHASARAKHAM UNIVERSITY: Student reflection and community contacts

Mahasarakham University students reflected on the engagement with the community and the impact on them and their learning. Much of this was done in classroom sessions at the university. However reflection also took place in informal situations such as the night–time session in the photo below, and in the field with local people where they discussed the results and plans for the future. Among the items in the students' reflection were: self–learning outside the classroom, needing to use our knowledge to help develop the community, learning to solve problems by myself, learning collaborative work, knowing the meaning of the words "volunteer" and "friendship", needing to design good [ICT] activities for juniors of Computer Science, learning the local lifestyle that is very different from my lifestyle. Post–engagement among students, instructors and the community identified future projects for the university–community partnership.

Following each of the boxes in the guidebook for students there are general discussions about the engaged learning process and activities that students can do in carrying out engaged learning. In this section, some of these possible activities are examined.

A substantial part of the pre–engagement process will usually take place in a semester before the actual field work. The engagement phase that includes the field experiences might take place during a following semester or it could be undertaken during a period within the semester. For example, engagement might occur during a holiday period. University policy and the convenience of the community may dictate the strategy. Post–engagement may occur in various periods after the field experience.

Your own preparation might include the development of case studies that use ICTD initiatives in your own country. These need not be complex. They can be based on reality or you can be creative in inventing case studies.

Teaching Tool 4: A formula for developing a case study

1. Identify or invent a community and describe an important need (for example helping families improve their health and health care).
2. Describe the key obstacles.
3. Identify the relevant stakeholders.
4. Suggest how ICTs might be involved.
5. Identify the community's important socio–economic and cultural profile.
6. Provide a picture of its communication habits and resources.
7. Describe the communication and ICT intervention.
8. Summarize the consequences, results and outcomes of the intervention.

5.1. Step 1: Pre-engagement

The pre-engagement phase needs to insure students' acquaintance with the emergence of ICTs as a major development player. For background and review of ICTD, the APCICT Primer Series provides a broad discussion of the applications of ICT to development issues. This ranges from An Introduction to ICT for Development (Primer Series 1), Project Management and ICTD (Primer Series 2), ICT for Disaster Risk Management (Primer Series 3) and ICT Climate Change and Green Growth (Primer Series 4). These are available online at http://www.unapcict.org/pr.

Assigning students to read APCICT's Primer Series 1 will provide them with a good introduction to ICTD and to various case studies that illustrate what students can do in applying ICT to different kinds of community development. This exploration and review can coordinate with or supplement classroom lectures, and can be an early step in the pre-engagement process of engaged learning.

APCICT's Primer Series 2 is important in planning for the engagement. It covers such issues as: factors that facilitate project success, monitoring and ethical issues in ICT systems development. Especially important for both you and your students are Annex 1 and Annex 2 of APCICT's Primer 2. Annex 1 describes in detail the development of a university outreach programme. Annex 2 identifies five major steps (tools) in developing a strategy for a communication-related intervention. The five steps include: situation analysis, setting communication objectives, identifying the key people (stakeholders), selecting media, identifying the appropriate content, and making evaluation decisions. It is a "how-to" discussion that will prompt thoughtful explorations by your students.

To get students thinking during pre-engagement about the challenges in an ICTD engaged learning experience, you can use Case Study 3 that reports on a situation in a Thai CLC. It suggests a need, and that need can be the issue that drives the classroom discussion.

[Case Study 4] THE STORY OF A COMMUNITY IN THAILAND: What can we do for this CLC in North-East Thailand?

The private house hosts a women's weaving group and the community uses the place as a CLC. Note that it has a computer and screen. The owner of the house believes in lifelong learning (a priority of the natonal government) and he goes to other CLCs to expand the 8th grade formal education he obtained as a youth. One of the needs he expressed was for the community to preserve its Isan culture that he believes is disappearing. [This Case Study also appears in the Engaged Learning Guidebook for Students.]

Action 4

Challenging students to link ICTD skills to a community need

To prompt thinking about how university students might become involved in community centres, you can discuss the situation in Case Study 3, which also appears in the Engaged Learning Guidebook for Students. Discuss with your students how a group of students might approach this need in the context of engaged learning. Following their comments, ask the students what their assumptions are about the community such as its citizens' skills and their resources. Challenge them to think about what skills they would need to undertake such an activity and how they would feel about working in this kind of environment.

This toolkit addresses the collection of information about the community partner later; here it is important for you to guide students in reading about the area's or the country's development issues, which will help provide a context for the engagement.

5.1.1. Motivating university students

There is evidence that young people can be effective agents of ICT in development. There is also evidence that the engaged learning experience has real community impact. For the student, the engaged learning experience can result in deeper, more varied forms of learning–including both the affective and cognitive domains.

The experience of students at Hong Kong Polytechnic University described in Case Study 4 can further stimulate your students to think about how it is possible for them to have an impact within the context of a university course. Discuss with your students the kinds of ICT–related interactions that seem reasonable in your own country.

[Case Study 5]
ICTD–BASED ENGAGED LEARNING IN HONG KONG

In 2013, approximately 100 Hong Kong Polytechnic University students participated in four ICT–related global engaged learning trips to Cambodia, Rwanda, Indonesia and Viet Nam. Themed "Technology without Boundary", students taught local primary school children and orphans in Cambodia and Rwanda how to use software for digital storytelling, animation programming and for making robotic cars. The university students also set up computer labs and an intranet system in a non–governmental organization (NGO), and provided training for its staff to make use of social media for publicity purposes. Some students developed solar panels to provide electric power to facilitate children's learning at night time. In addition, a team of students conducted a survey in slum villages of Cambodia, and the data collected were expected to be used by an NGO for identifying the needs of the villagers.

In Indonesia, the university students joined with the local community in a 25–day project organized by Duta Wacana Christian University of Indonesia and Hong Kong Polytechnic University to draw up strategies for developing the potentials of a village. By using global positioning system (GPS) technology and satellite images, students and the local villagers gained greater understanding of the local resources and their community's needs. Making use of spatial information analysis, students came up with solutions to address the problems faced by the local community, thereby encouraging sustainable rural development.

5.1.2. Classroom activity and research projects

Let us assume you have identified a community in your country for engaged learning. You should consider the possibility of sustaining a partnership relationship with this community for several years. Assign the class to design a strategy for learning about the community, including its character, its economic situation, its needs, its communication resources, and what ICT–related activities might benefit the community. Your own activity in selecting a partner community can help to guide this activity.

The students also need to know about the community's perception of its own needs, and about the opinions of local experts such as health specialists and local government officials on the communication needs of the community. What pre–conditions exist related to these opinions? What are the symptoms and what are the causes of the conditions? As suggested earlier, it would be useful to invite a representative of the community to meet with the class to describe the development needs of the community. The class needs to have this background in order to draft its ICTD community engagement plan.

Action 5

Students write about their own ICT reality

To sensitize students to the role of ICTs in their own lives and to continue the reflection process that is central to engaged learning, have students individually prepare a short paper telling how they have used ICTs in the past 7 days, and what they would have done without the ICTs.

A community profile can be constructed using a variety of means: conventional research into documents, inviting guest speakers, and making exploratory visits to the community that include interviews with local people. APCICT's Primer 2: Project Management and ICTD, Annex 2 includes a brief guide for doing research about the community, and understanding and managing the various elements that go into communication planning and the development of the strategies within which ICTD projects operate. You should decide how much of this research can be undertaken by the class. When the field

research is completed, it would be useful for you or another unit of the university to establish a database of these data that can be updated and used in future relations with the community. Building a database could be part of the engagement phase of the project.

Understanding communities

Action 6

If it is not convenient for a student team to visit the community to collect communication data, students can be sensitized to a community's availability and uses of ICTs by going out into a nearby community to interview 20–30 people about the community's communication behaviour. Or this could be accomplished by organizing focus groups from a nearby community. What media and ICTs do the people use, for what and how much? Direct the students to explore in the interviews what those people think they would do if they did not have those media and ICTs. Select a method for sharing the results in the class, probably best through each interviewer's report.

Returning to the situation in the partner community, this toolkit will focus on working with communities in your own country rather than abroad. This approach avoids many of the complications of travel abroad, major language difficulties and security problems. Working in a rural community in your own country can still offer opportunities for intercultural experiences especially when urban meets rural, affluent meets poor, male meets female, and majority meets minority. In a class session, students can be challenged in a discussion format to suggest how communication relates to the needs of the people or organizations in the partner community.

Understanding the context in which ICTs may be used is vital. Experts contend that projects driven by technology are doomed to failure. The World Bank emphasizes this point in regard to ICTD. Note, for example, the World Bank's approach to ICTD in an agricultural programme:

> *It is important to begin any ICT-in-agriculture intervention by focusing on the need that the intervention is [proposed] to address — not the need for ICT — but the need for better and more timely market information, better access to financial services, timely and appropriate crop and disease management advice…*.[20]

You may find it useful to assign students to study APCICT's Primer 2: Project Management and ICTD, Annex 2 that was mentioned earlier in Section 5.1. It provides "A Communication Framework for ICTD Projects". It emphasizes the need to understand the context within which an ICTD project is undertaken. Keeping this issue in mind, you, the students and the community need to draw up objectives for the field engagement activity. These should address the outcomes discussed in Section 4.2 related to the students' learning and to the outcomes desired by the community.

Action 7

Promoting reflection and a journal

For reflection, assign each student to write a first entry in a personal journal reporting on his/her feelings and perceptions concerning the engagement and the potential benefits to the community and to the student. Later the toolkit will provide some suggestions on the use of journals.

[20] World Bank, ICT in Agriculture Sourcebook: Connecting Smallholders to Knowledge, Networks and Institutions, Report 64605, 2011. Available from http://www.ictinagriculture.org/content/ict-agriculture-sourcebook.

5.1.3. Planning an ICTD strategy

APCICT's Primer 2: Project Management and ICTD, Annex 2 can also be valuable as a guide for drafting the community ICTD engaged learning plan of action. The class needs to decide what ICTs can do to benefit their partner community, what is within the students' capacity to deliver the ICTD benefits, and how it can be done within the time and resource constraints dictated by the engaged learning arrangements set up by the university–community centre partnership.

Action 8

Creating an engagement plan

Divide the class into teams. Assign each class team to prepare a report and select a plan of action for helping the community within the limits of the engaged learning time frame and within the students' and university resources.

After assessing the practicality of these proposed engagements, you need to negotiate with the partner organization(s) about which activities are feasible. Then you need to make appropriate arrangements both within the university and with the community for implementing the plan(s), including budgeting and arrangements for ongoing supervision of the field activities. It is important at this stage that all partners agree on the objectives of the engaged learning activities, including understanding the objectives of the people in the community. All partners need to realize what precisely communication can do. By itself it cannot improve yields of rice, improve the nutritional status of individuals or build schools. Communication can affect knowledge, beliefs, perspectives, motivation, attitudes, skills, understanding, and, to some extent, behaviour change. Students who participate in engaged learning inevitably discover that the needs and issues they encounter are multi–disciplinary, not communication alone. Thus, everyone involved needs to recognize the limits of communication and ICTD, and the possible importance of addressing other factors in meeting community's needs.

5.1.4. Combining students, ICTD and community centres

You can identify ICTD–related activities that university students may already have the skills to do (with some planning and organizing), or the students can collaborate with local partners to undertake the activities jointly in the community. Examples of some ICTD activities are provided in Teaching Tool 5 below.

Each of the activities listed can be approached as a workshop in a CLC, school or local library. Some activities can provide an opportunity to do individual mentoring, or as technical assistance to adult members of the community. In other words, students can teach about these, or provide assistance to those who need or can benefit from them. For example, university students can work with a youth group as an adviser to help the group produce a video that captures an oral history of the community, which can be archived in a computer at the CLC for all to see. Other students can show entrepreneurs how to upload photos and details of their products on an e–commerce site. You may need to check on the need to have "releases" that allow students to use photos or videos of people in the community. You can prompt your students to identify the steps and skills, and create scenarios related to some of the potential ICTD activities.

Teaching Tool 5: Potential ICTD activities for students

1. Teaching basic computer operations for lifelong learning
2. Teaching web page construction and management of data
3. Writing documents with a computer including building blogs
4. Storytelling using computers and photography
5. Using e-mail for establishing connectivity with others in the digital world
6. Searching on the Internet
7. Using ICTs to support farming
8. Using ICTs to support community health programmes, for example, using mobile phones to deliver relevant information to pregnant women
9. Using ICTs for record keeping and business management
10. Designing web pages for e-commerce or government records
11. Using ICTs for capturing and archiving oral history and local culture
12. Conducting workshops related to cases similar to those in the APCICT Primer Series
13. Conducting community surveys, for example, to inventory ICTs available, or to identify community needs that might be addressed with ICTs
14. Orienting various community and school groups to social media
15. Using ICTs to promote women's entrepreneurship and the empowerment of women

Model ICTD-related teaching in a CLC

Action 9

Divide the students into 2 or 3 person groups and have each group select an activity from the list of 15 ICTD activities (or add additional items). Have each group design a plan for carrying out that activity at a CLC, school, library, or other community location. Have the students present their plans in class sessions and invite reactions. The plan should include objectives and resources needed.

Action 10

Identifying ICTD skills

For students' reflection, you can assign them to enter into their journals their own assessments of what skills they could bring to a specific community project, what benefits the communities would obtain, and what ICTD skills they themselves might develop in order to make a contribution.

5.2. Step 2: Engagement in the CLCs

The engagement part of the course can take place between semesters or during a short break in the academic schedule. Students need to be alerted before they go into the field that the reflection process is an ongoing part of engaged learning, and reflection continues while they are in the field. A useful way of carrying this out is to assign them to write periodically in their journals about their feelings and their experiences.

Action 11

Journal writing assignment

Assign students to keep reflection journals similar to one developed by the Hong Kong Polytechnic University service–learning staff. Their model appears in Teaching Tool 6. Make arrangements that will give you the opportunity to read and respond to students' reflections while they are in the field.

Teaching Tool 6: Sample student journal assignments

Rounds	Assignments
1st Reflective Journal	At this point, you have finished your first session in the field. Think about what happened, and answer the following questions. No need to make it too long, we're only expecting about a page's worth! What did you see or encounter (about the clients, about the engagement, about yourself) that you did not expect? Did your plans work? If not, what would you change, and how do you need to adjust your plans?
2nd Reflective Journal	You are halfway through your engagement now. Reflect on your performance during the first half of the engagement and answer the following questions (about 1–2 pages or 400–600 words): Are there any things that you are particularly proud of? In the second half, is there something that you would do differently? Was there something that took you by surprise (concerning the recipients) during the engagement? For example, was there something that you expected they would know, that they did not? Or something that you thought they wouldn't know, but they actually did?
3rd Reflective Journal	You are done now. Reflect back on your engagement, and answer the following questions (1–2 pages or 400–600 words): 1. Among the things that you have done, what do you think you have done particularly well? Why? 2. What was the biggest challenge to your team? What was your biggest personal challenge? 3. What was the biggest surprise to you personally? As in: did you discover anything about yourself (your skills, your abilities, etc.) that surprised you?

Having students share some of their journal entries with you may be a good way to keep in contact. Once in the field, students need to confirm the details of the ICTD engaged learning activities with the appropriate community partners who were involved in pre–engagement negotiations. This includes access to ICT and CLC facilities, if necessary, and availability/schedules of those in the community who are involved in the engagement.

Urge students to take photographs and videos where appropriate for later reporting on the engagement. For example, it was mentioned earlier that your students might work with high school students in making a video about the community. Both the video itself and photos showing the production process would be useful in reporting on the activity later in post–engagement activities.

Some other student guidebooks on engaged learning address the issue of ethics and behaviour in the field. These appear in the Appendices in the Engaged Learning Guidebook for Students.

All of these actions in the engagement step suggest the need to have a well–organized communication system established among you, the students and the community partner. This may involve your residing in or near the community allowing regular visits; or have a reliable telecommunications system with agreed upon arrangements for making contact.

5.3. Step 3: Post–engagement

Post–engagement is a time for more active assessment and reflection of the engaged learning experience by the community, the students and the faculty involved. Assessment and reflection may be done in a semester or other period following the engagement, depending on your university's practices. This may be done during the engagement semester, during a break between semesters, or during the semester following the engagement.

The post–engagement activities should be designed to assess outcomes related to the classroom teaching and learning, and also to assess what some call "a culture of civic engagement and social responsibility." These activities should be driven, in part, by the objectives laid out in the pre–engagement phase. Some of these outcomes can be measured statistically and others may be more qualitative in nature (see Appendix E–2).

A range of options for post–engagement activities is provided below, and it is suggested that you adopt ones that fit the nature and objectives of your course, the culture of your university, and the culture of the local community. It is important to remember that among the intents of engaged learning, is the intent to provide a reality dimension to the classroom experience and to bring benefits to the community. The following subsections are suggestions for post–engagement activities and for strengthening the learning process.

5.3.1. Post–engagement activities with your partner community

It is important that you and other key staff members meet with representatives of the community partnership to discuss systematically the engagement process. How did the ICT project benefit people in the community? What of the ICT activities continued after students left, and how desirable and what is necessary to sustain the activities? What were the benefits? What were the challenges? What were the problems? How congenial were the student–community interactions? What ICTD projects could be done in the future by university students? A summary of this faculty–community discussion should be shared with students preferably in a discussion format that includes students' responses to similar questions.

5.3.2. Post–engagement activities for the university community

The Hong Kong Polytechnic University's Service–Learning Handbook identifies a variety of ways to strengthen the field learning experience (see Appendix C–2). They include:

- **Debriefing** in which a group of students are guided by faculty members or project supervisors to share their personal observations, or consequences of their actions.

- **Presentations** in which students summarize their ideas, experiences, thoughts and perceptions of what was accomplished in the field, as well as recommendations for future action on the part of the community and/or the students. Such presentations might include pictorial exhibits of field activities.

Cornell University student exhibiting engagement results at a campus event

In Appendix B, there is a link to a video that Hong Kong Polytechnic University students made revealing their reflections. Arrange for your students to view this, individually or in a group, and discuss with them how their reflections contributed to their learning. Reflection papers written by a student from Hong Kong Polytechnic University and a student from Seoul Women's University appear in the Appendix D of the Engaged Learning Guidebook for Students.

You can plan formal ways to recognize and report accomplishments related to engaged learning community interactions. In addition to celebrating the completion of a project and sharing findings with community stakeholders, publicizing engagement work through newspaper articles, newsletters, websites and public events can raise awareness about development issues and the value of engaged learning programmes to students, faculty, the institution and community partners.

5.3.3. Post-engagement activities for students

A student survey for reflection and discussion

Action 12

- Develop a student survey with scaled answers that will prompt students to think about their experiences both in the classroom and in the field. This can trigger classroom discussion and help students write a final paper for this part of the university course (see Teaching Tool 7 below for sample survey)
- Assign students to compile results of the survey and report to a class session. Invite discussion of the results.

Following are some ways that you can stimulate students to reflect on their ICTD engaged learning experience.

A summary paper and the future ICTD leaders honour recognition

Action 13

Assign students to write a summary paper on the topic of ICTD, its promises and challenges–based on class lectures and discussions, reading assignments, and the engaged learning experience. The focus should relate to students' perception of the relationship between their engaged learning experience and the students' perceptions of the benefits of ICTD. Select the best papers and share them with APCICT to be included in an APCICT "Future Leaders" web page devoted to outstanding student essays on ICTD.

Teaching Tool 7: ICTD Engagement Student Survey Items

	1 Very little	2	3 Moderate	4	5 Very much
	1	**2**	**3**	**4**	**5**
I learned about ICTD from the field experience.					
The field experience helped me understand life in a community.					
The field work provided a practical dimension to ICTD.					
Combining classroom work with field work is helpful.					
The community benefits from our engaged learning project.					
The field experience influenced me to look at other ways that ICTs can contribute to development.					
I have increased my own ICT skills as a result of the engaged learning experience.					
The engaged learning will have lasting impact.					
The community engagement has helped me become more aware of real-world problems.					
[You can consider adding others.]					

The following two assignments can sharpen a student's civic awareness. As noted earlier, following the expiration of the MDGs, the world community led by the United Nations identified 17 SDGs for 2030. A list appears in Appendix A and also in the Engaged Learning Guidebook for Students.

Linking the ICTD engaged learning experience to the SDGs

Action 14

Have individual students pick two goals from the SDGs list and write a paper on:

- How ICTs might play a role in reaching the goal;
- How this course has helped identify specific ICTD actions that might be undertaken by a community in relation to the SDGs; and
- What further preparation students might need for them to play a significant role in a community or agency, and make a significant contribution.

Documenting the ICTD engaged learning experience

Action 15

Assign students to write a reflection paper on the whole engaged learning experience of the class. To what extent and how has the course influenced the student's interest in preparing to use ICTs in civic activities in the future? How did the engaged learning experience in the field impact his/her confidence in applying ICTs to community development challenges?

Concluding note

By participating in this engaged learning experience, you have joined a significant movement toward making universities more relevant to the ICT world around you and to the people who will benefit from becoming part of the digital economy and society.

The author and the contributors to this toolkit wish you success!

Appendices

A. Sustainable Development Goals for 2030

The following is the 17 SDGs effective from January 2016 until 2030:[22]

1. End poverty in all its forms everywhere
2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture
3. Ensure healthy lives and promote well–being for all at all ages
4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
5. Achieve gender equality, and empower all women and girls
6. Ensure availability and sustainable management of water and sanitation for all
7. Ensure access to affordable, reliable, sustainable and modern energy for all
8. Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all
9. Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation
10. Reduce inequality within and among countries
11. Make cities and human settlements inclusive, safe, resilient and sustainable
12. Ensure sustainable consumption and production patterns
13. Take urgent action to combat climate change and its impacts
14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation, and halt biodiversity loss
16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

[22] For more information on the SDGs see http://www.un.org/sustainabledevelopment/sustainable–development–goals/.

You can learn more about the goals in a report by the International Council for Science and the International Social Science Council.[23] The report offers rigorous analysis of the proposed goals and targets, collectively and individually, assessing whether they are backed up by scientific evidence, whether they address the economic, social and environmental dimensions of sustainable development in an integrated way, and whether they are sufficiently specific to be effectively implemented and monitored. Concrete recommendations are advanced for refining the goals and targets, and for planning their implementation.

[23] See International Council for Science and International Social Science Council, Review of Targets for the Sustainable Development Goals, The Science Perspective (2015). Available from http://www.icsu.org/publications/reports-and-reviews/review-of-targets-for-the-sustainable-development-goals-the-science-perspective-2015/SDG-Report.pdf.

B. Guidelines for Student Reflection

As the main text of this toolkit suggests, reflection is a key part of the engaged learning process. That is why this topic is further elaborated here. This section is an excerpt from Frequently Asked Questions: Reflection, appearing online in Campus Compact, a major resource for information on engaged learning.[24] The original piece appeared in the form of 10 questions about engaged learning.

What is structured reflection?

The term structured reflection is used to refer to a thoughtfully constructed process that challenges and guides students in: (1) examining critical issues related to their engaged learning project; (2) connecting the engaged learning experience to coursework; (3) enhancing the development of civic skills and values; and (4) assisting students in finding personal relevance in the work.

What are the goals of reflection?

One critical goal for reflection is to help students make connections between the engaged learning activity and coursework. Reflection can be used to help students understand how to apply course knowledge to engaged learning projects, and to assimilate and link the engaged learning experience back to coursework. By incorporating such reflection, students get a deeper understanding of the course material. Another goal for structured reflection is the development or refinement of critical thinking skills, such as being able to identify issues, being receptive to new or different ideas, and foreseeing the consequences of one's actions.

Regardless of the outcomes emphasized in a particular engaged learning project, the reflection process must be structured to reinforce specific educational outcomes that faculty have identified as critical in the course. For example, if critical thinking is a goal, then faculty must design reflective exercises that help students understand the uncertainties inherent in the engaged learning project, identify a range of possibilities for addressing those uncertainties, and examine these possibilities from the perspective of different stakeholders. Faculty cannot assume that the engaged learning experience will

[24] For the full article, see http://www.compact.org/disciplines/reflection/faq/structured.html.

automatically result in enhanced problem–solving skills; an intentional, ongoing process is required for coaching students and helping them acquire such skills.

When should reflection occur?

Faculty must provide numerous opportunities for reflection before, during and after the engagement. The role of reflection varies according to the stage of the project. Reflection before the project can be used to prepare students for the engaged learning experience. Reflective preparation is key to the effectiveness of engaged learning. At this stage, reflection can be used to teach students concepts/theories required for the project, orient them towards the community organization and its needs, and offer them problem–solving skills to address the challenges that will arise in the community setting.

During the project, faculty can use reflection to encourage students to learn independently while providing feedback and support as needed to enhance student learning. Reflection offers faculty an opportunity to reinforce the connection of course content with the engaged learning experience.

Reflection after the engaged learning experience has ended can help students evaluate the meaning of the experience, grasp their emotional responses to the experience, think about the integration of knowledge and new information, and begin to explore further applications/extensions.

How can faculty design effective reflection?

In order to design an effective reflection process, faculty must address the question: How can reflection contribute to effective engaged learning? The six principles below can help faculty in enhancing both the quality of students' engagement and the quality of student learning through reflection.

- **Connected**: Effective engaged learning integrates engagement with coursework. Reflection is the means through which faculty can help students develop meaningful connections between the engaged learning experience and course content.

- **Continuous**: Student learning is enhanced by providing multiple opportunities for reflection before, during and after the project. Project effectiveness is also enhanced by using reflection to prepare students for the engaged learning experience and to guide students as they address community concerns.

- **Challenging**: Engaged learning projects should challenge students to think in new ways, raise new questions, and explore new ways of problem–solving, including the kind of public problem–solving connected to civic engagement. By encouraging students to explore issues more deeply, and to think about issues and solutions they may not have considered, faculty can enhance students' problem–solving efforts as well as the resulting learning.

- **Coaching**: Faculty must challenge students while simultaneously provide support and create a "safe" environment–one where students are confident that their contributions and feelings will be respected. Furthermore, students need support in executing complex project tasks. Note that continuous reflection facilitates the faculty coaching role by providing project–related information in a timely manner.

- **Contextualized**: Faculty can enhance the effectiveness of engaged learning projects by ensuring that reflection activities are appropriate for the context and setting of the project. Faculty must consider factors such as student knowledge and attitudes, community needs, and course objectives and constraints in designing the reflection process.

What are the different types of reflective activities that can be used in engaged learning projects?

A variety of activities can be used to facilitate student reflection. Faculty can require students to keep journals, and organize presentations and discussions with other students and with the community. Encourage students to publicly discuss their engaged learning experiences and the learning that ensued, and require students to prepare reports to demonstrate their learning. When constructing the reflection activities, faculty should consider the following:

- Reflection activities should involve individual learners and address interactions with peers, community members and staff of community agencies.

- Students with different learning styles may prefer different types of activities. Faculty should select a range of reflective activities to meet the needs of different learners.

- Different types of reflection activities may be appropriate at different stages of the engaged learning experience. For example, case studies and readings can help students prepare for the engaged learning experience.

- Reflection activities can involve reading, writing, doing and telling. Some examples of reflective activities are briefly described below:

Case studies	Assign case studies to help students think about what to expect from the engaged learning project and to plan for the engaged learning activity. Use published case studies or instructor–developed case studies based on past engaged learning projects.
Journals	Ask students to record thoughts, observations, feelings, activities and questions in a journal throughout the project. The most common form of journals are free–form journals. The journal should be started early in the project and students should make frequent entries. Explain the benefits of journals to students such as enhancing observational skills, exploring feelings, assessing progress and enhancing communication skills. Faculty should provide feedback by responding to journals, and organize class discussions of issue/questions raised in journals or further assignments based on journal entries.
Structured journals	Use structured journals to direct student attention to important issues/questions and to connect the community experience to classwork. A structured journal provides prompts to guide the reflective process. Some parts of the journal may focus on affective dimensions while others relate to problem–solving activities.
Team journal	Use a team journal to promote interaction between team members on project–related issues and to introduce students to different perspectives on the project. Students can take turns recording shared and individual experiences, reactions and observations, and respond to each other' s entries.
Critical incidents journal	Ask students to record a critical incident for each week of the engaged learning project. The critical incident refers to events in which a decision was made, a conflict occurred, a problem resolved. The critical incident journal provides a systematic way for students to communicate problems and challenges involved in working with the community and with their teams, and can thus help in dealing with the affective dimensions of the engaged learning experience.
Portfolios	Ask students to select and organize evidence related to accomplishments and specific learning outcomes in a portfolio. Portfolios can include drafts of documents, analysis of problems/issues, project activities/plans and annotated bibliography. Ask students to organize evidence by learning objectives.
Papers	Ask students to write an integrative paper on the engaged learning project. Journals and other products can serve as the building blocks for developing the final paper.
Discussions	Encourage formal/informal discussions with teammates, other volunteers and staff to introduce students to different perspectives, and to challenge students to think critically about the project.
Presentations	Ask students to present their community experience and discuss it in terms of concepts/ theories discussed in class.
Interviews	Interview students on community experiences and the learning that occurred in these experiences.

For a video about the reflections and evaluations of three students during their engaged learning in an NGO in Ho Man Tin from March to May 2013, see http://www.youtube.com/watch?v=sRuNgYoD87c. Within 10 minutes, students share their feelings before and after their engaged learning.

C. Additional Resources – Faculty Engaged Learning Handbooks

There are many resources on the Internet that contribute to the art and science of engaged learning. If you search, you may also consider using the term "service–learning." Some are general faculty handbooks (not discipline related); some provide sample syllabi in various disciplines (but not ICTD); others deal with reflection, evaluation and grading.

Following are two faculty handbooks that are among the best resources for exploring beyond this toolkit. They provide you with an explanation of engaged learning, planning an engaged learning course, details on working with partners, forms for communities to use in reporting students' work, and others. For each of the handbooks, a listing of the principal content that may be valuable to you is provided. These publications use "service–learning" as the label for what is called "engaged learning" in this toolkit.

C.1 The Berea College (USA) Faculty Service Learning Handbook, 28 pages

Available from http://www.berea.edu/celts/files/2012/06/FacultySLHandbook09.pdf.

The book provides convenient lists of steps and issues related to engaged learning (or service–learning) in a user–friendly format.

- An introduction to service–learning
- How to develop a service–learning course
- Service–learning resources
- Service–learning project agreement
- Community partner service–learning project evaluation form

C.2. Hong Kong Polytechnic University Service Learning Handbook, 42 pages

Available from http://sl.polyu.edu.hk/.

- Definition of service–learning at PolyU
- Roles and responsibilities of different parties
- Practical skills for service–learning projects
- Building partnership with collaborating agency
- Major steps for designing a service learning project
- Conducting different types of service projects
- Different types of reflection activities
- Assessing students learning outcomes
- Pre and post surveys for generic competencies
- Ethical concerns
- Principles governing student behaviour

C–3. Additional faculty handbooks

The following handbooks deal with a wide range of administrative, management and evaluation issues in engaged learning, and generally do not address specific disciplines. They often include discussions about the definition of engaged learning and reflection, and suggestions related to building partnerships in both the international and domestic context. Although these are often focused on particular university environments, they provide useful information on the engaged learning process.

C–3.1. American University (USA) Faculty Guide to Engaged Learning

Available from http://www.american.edu/ocl/volunteer/upload/Faculty–Guide.pdf.

The guide contains a variety of ideas and suggestions for persons in any academic discipline who are starting out on engaged learning. It also has a list of references and examples of engaged learning in various academic disciplines.

C-3.2. Lewis University (USA), The Office of Engaged Learning Faculty Handbook

Available from https://www.lewisu.edu/engagedlearning/pdf/OSL%20Handbook.pdf.

C-3.3. Towson University (USA), Engaged-Learning at Towson University

Available from http://www.towson.edu/studentaffairs/civic engagement/engagedlearning/faculty/documents/TUEngaged-LearningFacultyHandbook_002.pdf.

C-3.4. Clark University (USA), Community-Based Learning and Research: A Faculty Handbook

Available from http://www.clarku.edu/community/clbr/facultyhandbook.cfm.

D. Additional Resources – Articles and Case Studies on ICTD

In addition to the APCICT Primer Series, there are other interesting materials available in English about ICTD. Selections from these online resources can be assigned to students for writing reports and making classroom presentations.

D–1. David J. Grimshaw and Shalini Kala (eds.), Strengthening Rural Livelihoods: The impact of information and communication technologies in Asia (Ontario, International Development Research Centre, 2012)

Available from http://hdl.handle.net/10625/45947.

Here is a description of the publication:

> Enthusiasm amongst international development agencies about harnessing the potential of ICTs for development has waned as observers have recently questioned the impact and sustainability of such interventions. By presenting the findings of research specifically designed to measure impact on livelihoods, this publication offers new evidence for the development benefits of ICTs. The book presents an overview of six research projects within the Knowledge Networking for Rural Development in Asia Pacific (ENRAP) research programme. It asks if ICTs enabled farmers to sell beyond local markets and at better prices, and whether there have been social gains in linking geographically disparate households and social networks. Using a control trial approach in four out of the six project case studies, and critically assessing the pros and cons of this methodology including the ethical implications, the authors have provided significant new insights into how to overcome the challenges of mainstreaming ICTs into rural livelihoods and more effectively measuring its effects.

D-2. A. Sey, C. Coward, F. Bar, G. Sciadas, C. Rothchild & L. Koepke, Connecting people for development: Why public access to ICTs matters (Seattle, Technology & Social Change Group, University of Washington Information School, 2013)

Available from https://dlib.lib.washington.edu/dspace/handle/1773/22753.

Here is a description of the publication:

> Libraries, telecentres and cybercafés play a critical role in extending the benefits of ICTs to a diverse range of people worldwide. However, their ability to contribute to development agendas has come into question in recent times. The Global Impact Study was designed to address this debate by generating evidence about the scale, character and impacts of public access to ICTs in eight countries: Bangladesh, Botswana, Brazil, Chile, Ghana, Lithuania, the Philippines and South Africa. This report summarizes the study's key findings, situating public access in the context of national development, discussing some disputed issues, and providing recommendations for policymakers, public access practitioners and researchers. The results show that a central impact of public access is the promotion of digital inclusion through technology access, information access and development of ICT skills. Both users and non-users report positive impacts in various social and economic areas of their lives.

D-3. ICT for Development, Contributing to the Millennium Development Goals: Lessons Learned from Seventeen infoDev Projects

Available from http://www.infodev.org/articles/ict-development-contributing-millennium-development-goals.

Although this paper by infoDev, a multi-donor programme in the World Bank Group, is dated 2003, the lessons learned can still be applied today.

For example, one of the projects mentioned in the paper is B2Bpricenow.com, an e-commerce site for farmers in the Philippines. As mentioned in the paper:

> B2Bpricenow.com provides a free electronic bulletin board and marketplace designed to bring relevant market information directly to farmers, primarily through their cooperatives. As an electronic bulletin board, the website enables users to gain greater negotiating leverage from awareness of prevailing market prices for their products. As an electronic marketplace, the website aims to minimize intermediation (middlemen' s fees), thereby enabling farmers to reap the gains of lower costs and broader market reach… The main challenge was locating funds to cover education and technology costs. However, Unisys and infoDev eventually provided these funds. The main technical challenge has been poor-quality or non-existent telephone connections…electricity connection rates are also fairly expensive in the Philippines… While [the project] has focused on the Internet, it has become obvious that mobile phones offer a greater opportunity for relevant and useable service… Another major challenge is to ensure that cooperative members who attend the trainings keep up their skills... It is better to invite younger members from the cooperatives, as they are more inclined to continue to use the computer than older members.

E. General Guidelines to Engaged Learning Topics

E-1. The National Campus Compact has a useful set of resources at

http://www.compact.org/resources-for-faculty/
For example, there are course syllabi at
http://www.compact.org/category/syllabi/

E-2. Middle States Commission on Higher Education, Student Learning Assessment: Options and Resources

Available from https://www.msche.org/publications/SLA_Book_0808080728085320.pdf.

This book provides clear discussion of direct and indirect measures of engaged learning. Go to Figure 5 on page 29 to see the potential of this tool.

Notes

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UN-APCICT/ESCAP
United Nations Asian and Pacific Training Centre for Information
and Communication Technology for Development
5th Floor G-Tower, 175 Art center-dearo, Yeonsu-gu,
Incheon City, Republic of Korea

www.unapcict.org

UNITED NATIONS ESCAP / APCICT
Economic and Social Commission for Asia and the Pacific

Published with the support of the Government of the Republic of Korea