NOTES SECTION

Information and Communication Technology in Service-Learning: Some Ethical Issues and Concerns

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Information and communication technology (ICT) provides pedagogical benefits in teaching and learning. Likewise, it supports innovative service-learning (SL) as a teaching pedagogy. However, the use of ICT as a support tool in any pedagogical approach poses some ethical issues. This paper explores some ethical issues in the integration of ICT in SL activities. Specifically, this paper describes the ethical issues in using the Internet as a tool in writing SL reflection. This article also explains the ethical concerns in using the web as a tool in SL evaluation. The study employs a review of related literature and a personal interview among service-learners. The ethical issues discussed in this paper include privacy, authenticity of reflection, technology acceptance, reciprocity, informed consent, administration, and methodological alternative. It is concluded that there is a need to seriously address the ICT ethical issues in SL integration.

Keywords: Computer Ethics, ICT in Education, ICT Service-learning

INTRODUCTION

Information and communication technology (ICT) refers to information-handling tools used to generate, store, process, spread, and share information (United Nations Development Programme, 2001). UNDP defines ICT as the fundamentally diverse set of applications, goods, and services. ICT refers to the totality of electronic means for end-users such

as computer systems, office systems, and consumer electronics, as well as networked information infrastructure, the components of which include the telephone system, the Internet, fax machines, and computers (Commission on Information and Communications Technology, n.d.).

"ICT is a powerful resource that affects and enhances the quality of education" (Johnson, 2001). Johnson also added that "ICT equalizes education." ICT allows teachers and students to create, share, connect and reflect on their learning and that of others (UNESCO, 2011). Moreover, ICT is a support tool for an innovative teaching pedagogy like service-learning (SL). SL is a teaching pedagogy that combines trifocal functions in education—instruction, research, and community extension. "It involves the interplay of the acquisition of knowledge through research or instruction in the classroom, the application of this knowledge through service to the community, the internationalization of the value of service through reflections, and the appreciation of practical learning which the students bring back to the classroom for discussion" (Oracion, 2002). The Silliman experience of SL proves that SL is indeed an effective pedagogy in teaching.

However, few have known about the use of information and communication technology (ICT) in SL. As of this writing, there is no available literature in the Philippines that provides substantive information on the use of ICT in SL activities. The website of the National Service Knowledge Network posted a list of different ways on how ICT can be integrated with SL activities. These methods include integration in terms of program management, community partner participation, curricular tools, community service, reflection, and program evaluation. Table 1 shows the S-L components and their corresponding tools as well as the methods of integration.

On the website was also a listing of successful ICT service-learning among the network members. For example, the following schools use ICT as a tool for SL program management: Boise State University's Service-Learning Program, California State University at Monterey Bay's Service-Learning Institute, Indiana University-Purdue University Indianapolis, Central Washington University's Center for Leadership and Community Engagement, and The Center for Social Justice Research, Teaching and Service at Georgetown University. The website also enumerated several projects that demonstrate the use of ICT as a tool for SL. It also posted several resources on how to integrate ICT in service-learning as a teaching pedagogy.

Table 1. Uses of Information and Communication Technology (ICT) in Service-Learning (S-L)

SL Components	ICT Tools	Methods
Program Management	Databases	can help program staff to track student placements, community partner contact information, and the academic calendar partner experiences.
Community partner participation	Websites	can describe the SL programs, provide easy access to forms for registering a community project, and highlight stories of active community partner experiences.
Curricular tools	Online References	can enhance classroom and community-based learning
Community service	Virtual Space and Communication Support Systems	enables meaningful community service that does not necessarily involve regular or ongoing face-to-face contact between student and community partner (e.g., after meeting with community students in a web design course with a service-learning component).
Reflection	Web Blogs, Discussion Forums	enables students across different SL sites to communicate regularly, share their experiences, and respond to reflective questions posed by faculty and one another.
Program evaluation	Online Survey, Databases	enables students and community partners to respond to questions about their experiences and the impact of the program. Databases can facilitate the tracking and storage of program evaluation information.
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Adapted from National Service Knowledge Network

Amidst the many positive pedagogical benefits that ICT offers, are also ethical issues that must be considered. ICT is coupled with risks that affect stakeholders. Technological innovations bring benefits and new possibilities as well as risks and new problems (Johnson, 2001). Everyone must take into consideration the ethical concerns and issues tied to any technological advancement. ICT creates ethical issues because "it changes the instrumentation of human action" (Johnson, 2001). Computer ethics is unique. It is unique because computers have certain features that raise unique issues and these properties include logical malleability, impact on society, and invisibility factor, according to Moor (cited by Duquenoy, Jones, & Blundell, 2008). Likewise, Johnson (2001) explains that the ICT ethical issue is unique as it provides "new species of traditional moral issues."

Moreover, the web is a democratic publishing medium where there are a few restrictions (Duquenoy *et al.*, 2008). Johnson (2001) says that the Internet has three distinctive features that may trigger some ethical concerns: a) the many-to-many communication on a global scale, b) anonymity, and c) reproducibility features. The Internet poses several ethical challenges, and these challenges are mainly the results of its characteristics (Duquenoy *et al.*, 2008). According to Quinn (2004, cited by Duquenoy *et al.*, 2008), these characteristics consist of many-to-many communication, dynamic, scale and size of the Internet, global, and users—adults and children. Likewise, the Internet detaches users from the consequences of their doings that may result in the deterioration of the sense of responsibility for actions (Johnson, 2001). Further, Johnson (2001) states that violations of Internet rules are unethical. These informal rules or simply Internet do's and don'ts are referred to as netiquette that all SL practitioners must know and observe.

This paper presents some ethical issues and concerns about the use of ICT in SL. Specifically, this paper describes the ethical issues in the integration of ICT. The ethical issues were identified based on three views: 1) ICT as a content of SL, 2) the use of the web as a tool in writing SL reflection, and 3) the use of online surveys as tool in the program evaluation. Identification of issues is limited only to the three SL activities conducted in the college.

Data collection in the study was done through review of related literature and one-on-one personal interviews with selected service-learners. The review of related literature emphasizes on computer ethics that has direct or indirect bearing on the three views mentioned. A one-time personal interview was conducted one at a time to two service-learners to

gather qualitative supports of the ethical concerns raised in this paper. These service-learners, both graduate students of ED 145, were randomly selected. The interviews were digitally recorded for an average of 24 minutes.

INTEGRATION OF ICT IN SERVICE-LEARNING AT THE COLLEGE OF COMPUTER STUDIES

A Literacy Training for the Community

In 2013, the College of Computer Studies had its first SL integration. It was successfully implemented in three subjects: Computer Fundamentals (CFUND-1), Internship (IT 41), and ICT in Education (ED 145). CFUND-1 is a subject for non-ICT students such as medical technology students, physical therapy, and arts and sciences students. IT 41 is an on-the-job training and internship class of the Bachelor of Science in Information Technology and Bachelor of Science in Information Systems. ED 145 is a graduate class of the Master of Arts in Education.

As of this writing, the SL in the College of Computer Studies focuses on the ICT literacy training among different community partners. Specifically, the ICT literacy training focuses on literacy in such advanced topics as an introduction to computer, file management and organization, MS Office, MS Excel, MS PowerPoint, Communication Tools, and the World Wide Web. The SL process at the College of Computer Studies includes community identification, needs assessment, teaching-learning materials, designing, training delivery, training evaluation, reflection posting, reflection sharing, and continuing community relationships using the online platform.

E-Reflection: Writing Reflection on the Web

Reflection is one of the SL components that can be integrated with ICT (Table 1). ICT such as the forum and blogscan enables students across different SL sites to regularly communicate, share their experiences, and respond to reflective questions posed by faculty and one another. Similarly, Warschauer and Cook (n.d.) suggested a computer-assisted discussion in order to facilitate reflective interaction about SL experiences. They assert that computer-mediated reflection offers the

"permanence of writing wherein students can read, and reread, and reflect on the written comments, both during the conversation itself, or for post-hoc analysis."

The two common ICT tools that can be used during SL reflection are blog and forum. "As the Internet becomes an increasingly pervasive and persistent influence in people's lives, the phenomenon of the blog stands out as an excellent example of the way in which the Web enables individual participation in the marketplace of ideas" (Glencoe/ McGraw-Hill, 2006). A blog (a truncation of the expression web log) is a discussion or informational site published on the World Wide Web and consisting of "posts" typically displayed in reverse chronological order (Blood, 2000). Basic functions of a blog include classroom management, collaboration, discussions, and student portfolios. Some free hosted blogging platforms are Edublogs, Blogger, WordPress.org, and Blogmeister. Facebook and Weebly can also be used for blogging. Posted in the blog by Morris (2013), benefits of classroom blogging include improved literacy skills, authentic audience, sense of classroom community, global connections, ICT skills, homeschool partnerships, appropriate online behavior, and confidence. Moreover, blog promotes authentic learning opportunities in the classroom that translate into challenged, engaged, and invested learners (Tolisano, n.d.). A blog (sample screenshot, Figure 1) was developed using the free blogging tool, Weebly (i.e., www.weebly.com).

On the other hand, "online discussion forum allows students to work together on projects in small groups, participate in ongoing discussions focused on course content, and to 'present' group project products to the rest of the class" (Markel, 2001). According to Sheri Cyprus (2010, as cited in Kaur 2011), an online forum is also known as a message board, online discussion group, bulletin board or web forum. It differs from a blog. An online forum is a discussion area on a website whereby members can post discussions and read and respond to posts by other forum members. A forum can revolve around any subject in an online community (Kaur, 2011). Among the pedagogical implications of online discussion forums are constructivism, Piaget's developmental theory of learning, communities of practice approach, and critical thinking (Akers n.d.). A forum (screenshot, Figure 2) was also developed using Weebly.



Figure 1. Screenshot of a Blog Note: For privacy purposes, the student's name, course and email address are partially erased.

We didn't taught anything too fancy, just basics: (1) What is a Computer; (2) What are the parts of a computer; (3) and how does a

E-Evaluation: Assessing S-L Program Using Online Surveys

prominent part of our lives today.

ICT such as online survey and databases can enable students and community partners to respond to questions about their experiences and the impact of the program (Table 1). Databases can facilitate the tracking and storage of program evaluation information. Online surveys are part of the broader family of self-administered surveys using the Internet either offline or real-time ("Online Survey Jobs," n.d.). Among the standard online survey tools applicable in schools is Survey Monkey, Google Forms, Poll Everywhere, among others (Robertson, 2011). Robertson asserts that the online survey provides a positive impact on the learning, planning, feedback, and information among students and teachers. Online surveys offer several benefits in the academe,

as follows: administration speed, lower cost, flexibility, accuracy, anonymity and easier access to particular respondents (University of Exeter, n.d.). Furthermore, Archer (2003) asserts that web surveys can display the response data simultaneously with completion of surveys. He also adds that data from Web-based surveys are available in real time either graphical or numerical format. Reminders and follow-up on non-respondents are relatively easy, and data from Web-based surveys can be easily imported into data analysis programs (Archer, 2003).

On the college level, the community partners were requested to take the daily and the final evaluation of the training. Both evaluation forms were done online using Google Form. See figure 3 for the screenshot of the survey form.



Figure 2. Screenshot of a Forum

Note: For privacy purposes, the student's name, course and email address are partially erased.

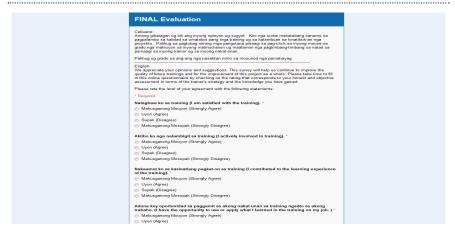


Figure 3. Screenshot of an Online Evaluation

Some Ethical Issues and Concerns

On privacy. What measures should be taken in order to protect the participants' online identities?

Privacy is the most important of the ethical issues in ICT (Johnson, 2001). Duquenoy *et al.* (2008) explain: "Internet and web make the collection, searching, analysis, access to, and distribution of, large amounts of information easier, cheaper and faster than before", adding that "our communications by discussion groups can all be recorded, logged, distributed and read by others—even years later." Baase (2013) summarizes the risks of uploading personal information on the web that may affect any stakeholders such as the government, education, businesses, and other forms of organization. Below are excerpts of the risks mentioned by Baase (2013):

- 1. Anything we do in cyberspace is recorded, at least briefly, and linked to our computer or phone, and possibly our name.
- 2. If information is on a public website, people other than those for whom it was intended will find it. It is available to everyone.
- 3. Once information goes on the Internet or into a database, it seems to last forever. People (and automated software) quickly make and distribute copies. It is almost impossible to remove released information from circulation.
- 4. We often cannot directly protect information about ourselves.

We depend on the business and organizations that manage it to protect it from thieves, accidental collection, leaks and the like.

During the conduct of the e-reflection, students were required to write their complete name, course, year, and email address for identification purposes (Figure 4). The primary intention was for the teacher-in-charge to know who owned and published the reflection that would help him/her in the scoring process. In short, it was a requirement to post necessary student information on the web. This information can be described as personal information. "In the context of privacy issues, personal information refers to any information relating to, or traceable to, a person (Baase 2013)." Examples include those being required during the posting of S-L reflection (Figure 4).



Figure 4. Screenshot of a reflection post Note: For privacy purposes, the student's name, course and email address are partially erased.

During the interview, the risks mentioned by Baase (2013) were presented to the service-learners. The two interviewees revealed that they did not know about the four risks. Hence, the risks presented did cross their mind when they wrote their reflection on the web. However, service-learner A was very much aware of the issue of plagiarism, which is not being contested in this paper.

On authenticity of the reflection. How can the originality, uniqueness, and genuineness of the work can be checked if students can view others' (previous) posts?

"A blog post goes public, in other words, it can be accessed and read by almost everyone who have an access to the Internet" (Sandlar, 2009). Most

importantly, writing a reflection on the web provides an opportunity for students to access and read other postings as a way of sharing. However, Sandlar (2009) also explains that "the moment students open to the web; it is not just a blogging site that they can have access to. A whole world of information is before them. Hence, there is every chance that students' attention will get diverted from the discussion." Further, blogs create a sense of competition among students (Sandlar, 2009).

During the interview, service-learner A admitted that she first read the posting of others before she posted her reflection. The service-learner said that she read the last post to check if her reflection was correct. She also tried to compare her work. She also admitted that she ran some edits on her reflection before making it available online. She said that she added some parts in the reflection based on what she knew from a previous posting. On the other hand, service-learner B, who was the first to post, admitted that she might have also read other postings out of curiosity and check on the format.

On technology acceptance. What are the performance and effort expectancies, attitudes, and anxiety levels during the e-reflection and the e-evaluation?

The usual claim that Web surveys are much cheaper than mail surveys is not necessarily right (Fricker & Matthias, 2002). The implementation of Web surveys is technically more involved than mail or phone surveys. Likewise, online surveys have technical problems that may affect the reliability of the evaluation; these are freezes and crashes and error messages and double entry, posted on the website of Information Technology Services at The University of Texas at Austin.

During the interview, both service-learners said that it needs more effort to make reflections on the web compared to paper-based reflections. "I like the traditional; there is something with pencils that I like," service-learner B said. "I do not like the screen" and "I spend effort in motivating myself to type and to open the computer," she added. On a positive note, service-learner B finds the paper-based reflection more productive in terms of the content. On the other hand, service-learner A said that it is quite difficult to write a reflection on the web. She experienced a little pressure and felt intimidated after reading the post of service-learner B.

Fortunately, both have skills in writing reflections on the web because they experienced writing reflections. Service-learner A maintained a blog site while service-learner B wrote her blogs to any free and available blog platforms.

On reciprocity. How can reciprocity be achieved in web-based reflections and evaluation?

Writing online, similar to blogging, promotes interactivity (Kuhn, 2005). Kuhn suggests that to be ethical, among others, a person who posts must visit and post on other postings in order to achieve interactivity. In the same manner, teachers should promote human element in writing reflections such as blogging (Kuhn, 2005). Kuhn suggests, in his code of blogging ethics, minimizing harm to others when posting information, promoting community by linking to other blogs and keeping a blogroll, and building relationships by responding to emails and comments regularly. Further, another significant impact of using the Web as a tool for SL reflection is its permanency. Writing reflection online allows the students and teachers to respond and interact outside the laboratory. Teachers can give comments and feedback to the reflection and evaluation for the students and community partner to respond. Sandlar (2009) says that web-based writing such as reflection provides a space for "students and individuals to share their articles and opinions with people outside their community." In short, the Web connects students and teachers (Baase, 2013).

However, due to the digital divide, interactivity and connectivity are hard to achieve. Unfortunately, not all students have constant access to the Internet. Moreover, the majority of the community partners do not have the necessary learning technologies. For example, during the SL among security personnel, only 22.73% had personal computers; 22.73% had Smartphones; 13.64% had a tablet computers; and 13.64% had laptop computers. The data implied that not all community partners had access to the technology. The principle of equal access to ICT is based on the claim that all people have a right to access this technology. As cited by Duquenoy, *et al.* (2008), Moss (2002) indicates that "people without access to technology are disadvantaged because their access to knowledge is significantly limited" (i.e., their participation and involvement are hindered).

In the same manner, motivation is also a factor in any web-based reflection and surveys. Archer (2003) reveals that in conducting web surveys the "decision not to respond is likely to be made more quickly." This claim is supported by the two service-learners who revealed that after posting their reflection, they no longer visited the web blog site. Both of them said that they did not dare to read other postings after the subject ended.

On the other hand, Marra and Bogue (2006) claims "Online survey tools help bring assessment activities more within the reach of organizations." They caution the users "to understand that proper assessment requires careful definition of objectives and likewise careful development of reliable and valid items to measure those objectives."

On informed consent. To what extent is informed consent established during e-evaluation (online surveys) among the community partners?

O'Neill (2004) stresses "Electronic surveys must contain a description about the purpose and methodology of the study, including samples of the online research instruments." He also highlights that informed consent instructions must be provided. One way to ensure that informed consent is established is by providing an "I accept" [terms and conditions] box (O'Neill, 2004). On the website of Survey Gizmo, a survey web tool, posted easy steps in creating a survey with informed consent. The first page of the survey must only include one question asking for the survey taker's consent using any buttons (Heidtke, 2008). For example, a "Checkbox Question" with the option as, "Yes, I consent" (or something along those lines) can be used. This question must be "Required." Another way is to use a "Radio Button Question" with the answers Yes or No.

On administration. Who will take charge of the cost? It should be noted that the SL activities at the College of Computer Studies are not field-based academic learning. The partner communities are brought inside the premises of the school, particularly inside the computer laboratory. The uniqueness of this integration entails that the activity provides less harm and risk to students and faculty as opposed to many field-based SL practitioners. On the other hand, the conduct of the training inside the campus entails administrative cost to the university. This cost may include the cost of the maintenance of computers, electricity consumption, and other operating expenses.

On methodological alternative. Can we compel the students to write reflections on the web (instead of the paper-based reflections)?

In a blog post, Vee (n.d.) suggests ways for teachers to help students mitigate some of the risks in writing online. First, teachers should raise their students' awareness on the potential dangers of writing in the public sphere. It must emphasize that future employers, their families, or complete strangers can read their posts possibly for years in the future. This suggestion is supported in websites ("Blogs, Twitter, wikis", n.d.) that say, "Don't put

online anything that might embarrass you later or cause another person embarrassment, commercial loss or distress." Second, teachers should encourage their students to post on their blogs with only their first name or a pseudonym known to the class. Without a last name attached to the blog, much of the danger of public writing is allayed. Third, teachers should make blogs optional. Teachers must offer specific alternatives in using blogs. Teachers must give options for students to find an alternative to blogs. Students should not be forced to post a reflection into the public sphere especially if they are comfortable. Lastly, students must be encouraged to approach their teacher if they are uncomfortable posting their reflections.

In addition, teachers must conduct a thorough orientation about the risks of writing reflections online. The accountability, accuracy, independence, and tone of the write-ups (ICFJ Anywhere, 2012) must be emphasized. Similarly, Upstart listed three ethical practices on writing online such as blogging that can serve as guide for teachers. First, one has to take full responsibility of anything he/she pots; 2) one should consider the possible effects of every post he/she writes; and 3) one should attempt to foster a sense of online community ("Ethical Blogging," 2014).

When asked if they would recommend the use of the web as a tool in writing SL reflections, service-learner A said it would depend on the students and teachers. Service-learner B said that she would recommend SL. However, service-learner B suggested some precautionary measures for students such as ensuring objectivity in their reflections and focusing more on the content. She also added that using the web for SL reflection is a good and interesting idea.

CONCLUSIONS

In today's digital knowledge economy, it is high time that ICT can be integrated with SL especially in Silliman University and in the Philippines. The use of the Web as a tool in reflection and evaluation may be replicated with the other SL practitioners. A comprehensive software that will handle all the SL activities listed in table 1 should be developed.

The ethical issues that emerge in ICT SL must be addressed and must be taken seriously by all SL practitioners. SL practitioners must always be reminded that people are morally responsible, but computers are not (Ermann, Williams, & Shauf, 1997). There is a need to develop ICT-related

protocols in SL. An ICT usage policy must be institutionalized "defining appropriate and inappropriate ICT user behavior" (Reynolds, 2003). A thorough orientation about computer ethics must be conducted and learned before any ICT integrated SL. Moreover, ICT ethics is a concern that needs human vigilance in using and integrating it (Johnson, 2001) especially in innovative SL. Finally, it is recommended that a thorough qualitative and quantitative study be employed to evaluate the ethical issues and concerns during ICT SL integration.

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APPENDIX

A. Sample Training Outline

Day 1

8:00 - 10:00 - Computer Hardware

- What is a Computer?
- Basic Parts of a Desktop Computer
- Connecting Computer Peripherals

10:00 - 12:00 - File Management

- Parts of the Desktop
- Understanding Directory, Folder and File
- Creating, Renaming, Deleting and Moving a Folder
- Saving, Renaming, Moving a File
- · Searching a file

1:00 - 2:30 - MS Word Basics (Part I)

- Getting Started with Word
- Text Basics
- Formatting Text
- Saving
- Modifying Page Layout

2:30 - 5:00

- Checking Spelling and Grammar
- Using Indents and Tabs
- Line and Paragraph Spacing
- Working with Lists

Day 2

8:00 - 12:00 - MS Word Basics (Part II)

- Working with Columns
- Working with Shapes
- Text Boxes and WordArt
- Inserting Clip Art and Pictures
- Formatting Pictures

- Working with Tables
- SmartArt Graphics

1:00 - 4:00 - MS Excel Basics

- Getting Started with Excel
- Cell Basics
- Modifying Columns, Rows, and Cells
- Formatting Cells

4:00 - 6:00

- Sorting Data
- Creating Simple Formulas
- Worksheet Basics
- Working with Charts

Day 3

8:00 - 10:00 - The Basics

- Getting Started
- Slide Basics
- Text Basics
- Applying a Theme
- Inserting Images
- Applying Transitions
- Checking Spelling
- Presenting Slide Show
- Saving and Printing

10:00 - 12:00 - Common Tasks

- Modifying Lists
- Indents and Line Spacing
- WordArt and Shapes
- Modifying Themes
- Formatting Pictures
- Arranging Objects
- Animating Text and Objects
- Inserting Videos
- Inserting Audio

1:00 - 3:00 - Doing More

- SmartArt Illustrations
- Hyperlinks and Action Buttons
- Working with Tables
- Working with Charts
- Reviewing Presentations
- Advanced Presentation Options

3:00 – 5:00 – Closing Ceremonies

Awarding of Certificates

Awarding of Token and Prizes

Reference: http://www.gcflearnfree