IT EDUCATION:
SERVICE LEARNING AS AN EXPERIENTIAL COMPONENT

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ABSTRACT

This paper describes a Service Learning course offered to residential college students within a Jesuit University who are expected to perform service during the year. The authors previously taught the course without a semester-long service requirement, with great success. The course, titled "Technology and Society," is ideally suited to a service-learning format. The students work in an inner city high school for the service component. A major element of the course is each student's weekly reflection on the service component, and its impact on the student.

Keywords: Service-learning, Ignatian pedagogy, technology and society, experiential learning

INTRODUCTION

There are many definitions of Service Learning in the literature. In every case, however, the integration of instruction and active execution of some aspect of that instruction is deemed essential. Bringle and Hatcher (1) suggested that service learning "is a credit-bearing educational experience in which students participate in an organized activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility." Clearly, Bringle and Hatcher expected classroom instruction to be supplemented by some "organized activity" external to the classroom.

Jacoby (6) went a little further, "service learning is a form of experiential education in which students engage in activities that address human and community needs together with structured opportunities intentionally designed to promote student learning and development. Reflection and reciprocity are key concepts of service learning." In the preceding definition, Jacoby (6) introduced the notion of reflection, and the current researchers found a resonance with student groups at their institution. Reciprocity is critical to the project which is designed in consultation with the community, and that the students and the community receive some benefit from it.

The authors of the current paper participated in international projects in which cultural sensitivity was a high priority (2). Gordon (5) cautioned against short-term projects the residual effects of which are questionable. He had international projects in mind, but there should be similar concern when implementing such projects in disadvantaged inner-city communities. The projects should emerge from the expressed needs of the community into which they are introduced. College students are frequently different from the community in which they render service, and the instructor's ability to guide the students and make them culturally sensitive is an important element of service learning. In this context, reflection and reciprocity are critical factors in designing, implementing, and executing service-learning projects that are culturally sensitive and beneficial to the executor and recipient alike. In Management education, discussion

is increasingly focused on service learning as a means to integrate the broad context and impact of business into the educational experience (Samuelson in 4).

The 28 Jesuit institutions of higher education in the United States implement service learning in a variety of ways. The unifying factor is their reliance on Ignatian pedagogy (3), which originated in 1459 and thrives today, duly updated for contemporary realities. Jesuit institutions conduct their instructional endeavors in a manner that should produce "women and men for others" – a concept that service learning encompasses readily. In many courses, and in volunteer service activity throughout their college experience, students become aware of the needs of those less fortunate than they are, and are called to action in addressing injustices wherever encountered. One aim of a Jesuit education is "… the full growth of the person, which leads to action…" (Kolvenbach in 3).

The dynamics of the Ignatian Pedagogical Paradigm (3) include Context, Experience, Reflection, Action, and Evaluation:

- *Context* of learning – teachers and students learn the facts about the topics
- *Experience* – internalize the material. Examine it from various perspectives
- *Reflection* – capture meaning and essential value of subject, and its relationship to other aspects of knowledge
- *Action* – deeds not just words; having reflected action should enhance the learning
- *Evaluation* – assess the learning and activity

In developing the *Technology and Society* course, the researchers attempted to include the principles of service learning as derived from the literature, within the model of the Ignatian Pedagogical Paradigm. Each chapter in the texts explores effects of technology on a different group or industry. The *context* is thus established, from which the students and instructors may frame their service activity. Subsequently, as the students spend time in the inner-city school teaching students to use computers to research and write, they will *experience* some of the cultural constraints they previously studied. Their *reflection* will help internalize this material, made more real through their practical experience. They begin to understand the links between their own educational and other advantages, and the struggles of those less fortunate, who may not have a similar support system. The *action* they might then take is the result of reflection, which in turn flows from the context of learning. The action then concretizes the abstract concepts that the student gleaned from the readings, and enhances the learning. At the end of the course, the students are required to complete an assessment form in which they *evaluate* the extent to which the learning was linked to the activity in which they engaged, and with the context of the subject matter.

Bridgeport, CT is a nearby city with a large population of immigrants and people in the lower socio-economic strata. It is in that community that the students in this course offered service. Each student spent at least one hour each week performing an IT related task. The tasks varied with the particular skills of the university students. Some students helped with teaching technology courses; others assisted the high school students with their applications to colleges. The university students exuded the confidence of regular technology users, whereas many of the high school students were from deprived families, whose only computer access was at school.

The researchers will continue to modify the course design as events dictate. In following semesters, students could explore the possibility of conducting software training at a residential recovery center in the city. The residents need some marketable skills. Using a computer confidently is an essential skill. There are many systems development opportunities in the

management of the Center. The Information Systems students would get first hand systems analysis experience that would relate their course work and their service activity in a positive way.

The inaugural session of this course, whose outline appears below, is currently in its eighth week.

COURSE OUTLINE

IS 300 – Technology and Society
As a Service Learning and U.S. Diversity Course
For the Ignatian Residential College
The students in the college participate in various activities, amongst which community service and reflection are major components. The group is diverse and includes all segments of the US population, and they are disposed to critical thinking and reflection. With this in mind, it would seem appropriate to consider modifying the Technology and Society course so that it would include elements that would justify its classification as a Service Learning course and a U.S. Diversity course. The course will include class trips to inner city high schools and/or soup kitchens.

In order to qualify as a Service Learning Course, there should be a semester long service component, during which the students will maintain a journal in which they would enter their reflections. Thus, the Ignatian principles of Instruction-Reflection-Action would be the focal part of the course. The Instructors should expect to be deeply involved in the selection and execution of the service aspect. There are organizations on and off campus to assist the instructors, but the instructors' presence and involvement are indispensable. It is possible that multiple speakers could present topics to the class.

Texts: Technology and the Future, Teich **(T)**, and Society and Technological Change, Volti **(V)**.

Week 1 and 2: Introduction to principles of Catholic Social Teaching (excerpted from "Our Best Kept Secret"). This would include discussion of the original encyclical from 1891 and the recent Centesimus Annus in 1991. These documents could be used to frame the basic tenets of human dignity that should guide all commercial endeavors.

These documents relate to the dignity of the human person. As such the topics inevitably go deeply into class distinctions, and the treatment of minorities. These principles are then woven into the succeeding weeks' discussion as the students examine the relationship of technology to various groups of people around the world.

Week 3: The nature of technology (V1), Winners and losers: the differential effects of technological change (V2); The sources of technological change (V3).

These chapters are important as they set the tone for the following chapters of the text. The notion of winners and losers is itself fraught with class dynamics including power and gender based options.

Week 4: Does improved technology mean progress? (T1); Can technology replace social engineering? (T2).

The students will determine whether the introduction of technology will solve the perceived problems or create new ones. They must review the discussion of weeks 1 and 2 and frame their response in terms of human dignity and freedom to choose. The discussion will lead to an examination of the "digital divide" which is certainly class, race and gender related.

Week 5: The diffusion of technology (V5); Medical and biological technologies (V7).
    The readings delve into the issues surrounding sharing of data, dissemination of confidential information and the security of the Internet. Whether less developed countries or areas have the resources to participate in this activity, and whether the citizens are aware of their rights as to confidentiality is a serious matter. Thus the readings lead to class discussion of the powerless and uneducated people all over the world.

Week 6: The dark side of the genome (T19); In the age of the smart machine (T24).
    The readings add more ammunition to the previous week's readings. Technology could unleash some undesired results, and the powerless are not considered too seriously by the decision makers. Students should be made aware of all sides of the issues and take a position based on the information they have absorbed.

Week 7: Technology, energy and the environment (V6); Technology and jobs (V9); Technology change and life n the job (V10).
    All these chapters are laden with material that will open the students' minds to instances where those in authority negotiated storage or dumping of contaminants in areas occupied by the poor and powerless. In addition to the readings videos will present some stark examples of poor environmental policy by some multinational corporations. The discussion would include the effect on employment of technology related companies.

Week 8: The electronic media (V12); Electronic privacy in the 21st Century (T23); Why I am not going to buy a computer (T5).
    These chapters elicit some basic reactions from the students. They are used to certain rights, but often do not realize that they live in a country where those rights are respected. They are then taken into areas of the world that do not have such rights, and the resulting oppression that could and sometimes does follow. The rise of electronic media has displaced the jobs of many technical tasks. Printing is just one of these and the effects on families and women are examined in detail.

Week 9: Weapons and their consequences (V13); How new weapons emerge and may be contained (V14); Technology and its creators: who's in charge of whom? (V15).
        There is more than enough material here to engage in a discussion of all the groups of concern to the Diversity requirement. The cause and effect of war on all the groups is examined and the economic advantage of war is also presented for discussion.

Week 10: Black futurists in the information age (V16); Feminist perspectives on technology (T3);Great expectations: why technology predictions go awry (T16);
    These chapters clearly touch on the two major themes of a diversity course. How technology affects the poor, blacks and other minorities, and how women are caused to deal with

the situation is very well presented in the readings. The students opinions are of major interest to the instructors, and usually there is no problem engaging them in this discussion.

Week 11: Governing Technology (V17); Technological politics (T11).
     These chapters do not explicitly touch on diversity issues. However the instructor has ample scope to lead the discussion towards the politics of technology policy and how the inner city areas and other areas in the digital divide are systematically excluded.

Week 12: technology: the tragic view (T6); An unforeseen revolution: computers (T17).

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