

## Theoretical bases for service-learning: implications for program design and effectiveness

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### Abstract

*Background:* Service-learning as pedagogy and a curricular consideration has been introduced to tertiary education of the Asia-Pacific Region. Theoretical framework and research in this area is still in its infancy. However, much can be learned from related theories and concepts, on which service-learning research can be conducted.

*Aims:* This paper examines existing developmental, learning and cognitive theories, based on empirical research, in relationship to service-learning, with the objective of strengthening the effectiveness of service-learning program design and practices.

*Conclusion:* An integrated service-learning conceptual model for development of the whole person and the enhancement of academic learning emerged from the examination of related theories. The service-learning conceptual model is the result from an integration of experiential learning theories, the understanding of brain functions, and impact studies of students who engaged in service-learning

**Keywords:** Service-learning; developmental theories, cognition

## 服務學習理論基礎：課程設計及有效性的應用

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### 摘要

*背景：*亞太地區高等教育界已漸漸引入服務學習作為教學法和課程設計的考慮，唯相關的理論架構和研究仍處於萌芽階段。不過，我們可以從相關的理論和概念學習，並推行服務學習的研究。

*目的：*本文基於與服務學習有關的實徵研究(empirical research)，探討現有的發展、學習和認知理論，以加強服務學習課程設計及實踐的有效性。

*結論：*透過相關理論的探討，一套以全人發展及提升學習為目標的綜合性的服務學習概念模式得以建構。服務學習概念模式綜合了經驗學習法(experiential learning theories)、大腦功能的認識和服務學習對學生的影響研究。

**關鍵詞：**服務學習、發展理論、認知論

*I see and I forget  
I hear and I remember  
I do and I understand*  
(Confucius)

## Introduction

In recent years, colleges and universities in the Asia-Pacific Region has begun to embrace service-learning. Programs are sprouting in diverse forms, some with greater success than others for a variety of reasons, but all have enjoyed positive results for most participants. Why the variations in program design? Does one design have greater impact than another? Who is affected by service-learning and why?

This paper highlights selected theories, based on empirical research, in response to these questions. Applying these theories to the design of service-learning programs increases their respective effectiveness as tools of education and development for all participants.

## What Is Service-Learning?

Service-learning has many definitions, but they all share some common characteristics. Alfred Chan Cheung Ming and his colleagues, Carol Ma and Florence Fong of Lingnan University, note that “Service-Learning combines rigorous academic study with voluntary community service. The service performed by students illustrates and reinforces their academic study through the process of critical thought and self-reflection.” (Office of Service Learning, 2006, p.8). Ten years prior to that, Jacoby describes service-learning as “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.” (Jacoby, 1996, p.5)

Yet, Odyssey Travel, a non-profit organization specializing in educational travel programs established in 1983, describes service-learning as “a method of teaching and learning that combines community service with instruction to enrich the learning experience and add worthwhile service within the community.” (Simond, 2007) And, at the University of California, Los Angeles, it has been guided by this definition:

Service-learning is an active form of teaching and learning in which all involved, namely the students, faculty, community sponsors, mentors, and those served, engage together in activities, that address human and community needs, with structured opportunities designed to promote learning and the development of all. (Permaul, 2009)

Finally but equally significant is the model adopted by Office of Service-Learning (OSL) at Lingnan University, Hong Kong: *Serving to Learn and Learning to Serve*. In examining this motto, it becomes obvious, that service-learning is more than a process of teaching and learning (serving to learn), but also is a source of learning from serving (learning to serve) and consequently a curricular issue as well. It is therefore not surprising that in one of the first comprehensive studies on the affect of service-learning yields both cognitive and affective learning, with “the performance of service” being the prime source of learning. “The single most important factor associated with a positive service-learning experience appears to be the student’s degree of interest in the subject matter. Subject matter interest is an especially important determinant of the extent to which (a) the

service experience enhances understanding of the ‘academic’ course material, and (b) the service is viewed as a learning experience.” (Astin et al, 2000).

These definitions provided by individuals affiliated with different institutions, one with a liberal arts university, another a scholar involved in research on teaching and learning, a third from an educational-enrichment institution and a fourth from a comprehensive research university. These institutions have in common the mission of education, the pursuit of knowledge and skills. The definitions have in common active learning, involvement beyond the boundaries of the classroom and the campus community, response to real needs found in local community and engagement in purposeful activities with emphasis on learning and development by serving others.

Given the nature of service-learning as defined, one can build on existing theories based on empirical research that speak to active learning, cognitive and affective development, and relationship between learning and various services as stimuli, in guiding the design and administration of service-learning courses and programs. Theories discussed in this paper have significant implications to successful service-learning efforts.

### **Theories on Active Learning**

Active learning frequently is related to learn by doing. An age-old example of this type of learning is apprenticeship, learning by doing under the instruction and supervision of masters, while the masters perform their respective trade or profession. Contemporary versions of apprenticeship include medical internship and residency, moot court and clerkship as part of legal professional training, field work for training of social workers

and practice teaching for training of elementary and secondary teachers. But these contemporary forms of apprenticeship all require traditional classroom studies as preparation and concurrent support to the apprenticeships.

Such practices led John Dewey to proclaim in School and Society that:

“No number of object lessons, got up as object lessons for the sake of giving information, can afford even the shadow of a substitute for acquaintance with the plants and animals of the farm and garden acquired through actual living among them and caring for them. ... Verbal memory can be trained in committing tasks, a certain discipline of the reasoning powers can be acquired through lessons in science and mathematics; but, after all, this is somewhat remote and shadowy compared with the training of attention and of judgment that is acquired in having to do things with a real motive behind and a real outcome ahead.” (Dewey, 1902, pp.11-12)

Dewey’s declaration broadens the practice of apprenticeship. He acknowledges the respective contribution of “object lessons” and “actual living among [the objects] and caring for them” as critical to education. He further emphasizes the importance of “training of attention and of judgment” with “real motive” and “real outcomes” as parts of education.

These elements of education identified by Dewey set the stage for today’s theories on experiential learning and service-learning. Learning is more than memorizing facts and formulas, but is understanding of the subject (not just the object) in the context of real life with real consequences. Further, active learning is more than “doing”, but involves active engagement in the processes of gathering the facts, and thoughtful analyses of the facts in the context of reality with consideration of the

consequences from “doing”, albeit with intentional deliberation before taking actions.

Separate and distinct from Dewey’s train of thoughts, the National Training Laboratory (Dale, 1946) developed the Learning Pyramid which holds well for active learning. As depicted in the Pyramid, there is a positive correlation between the degree of active engagement used by instructors with the degree of retention of subject matter by the students.

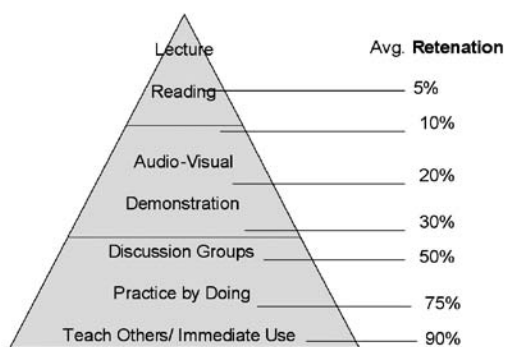


Figure 1 : Learning Pyramid, based on work by National Training Laboratories, Bethel Maine

David Kolb and associates on the other hand was researching learning outside of the classroom, primarily in the work place.

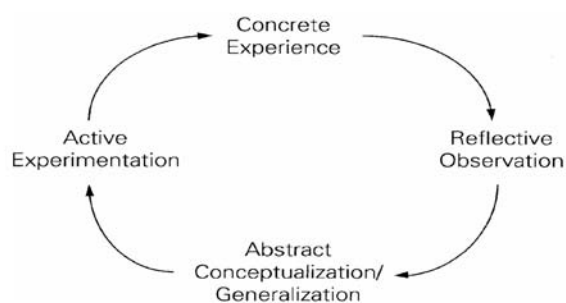


Figure 2: Experiential Learning Cycle (Kolb & Fry 1979)

In this and many efforts which followed, Kolb identified four experiences which are essential to successful learning and produced the experiential learning cycle (1979). Their notion of successful

learning goes beyond acquisition of skills and knowledge, but the understanding, appreciation and application of the object.

Kolb observed that most learning by students is partial and that successful learning requires the learner to complete the entire cycle, and in some cases, over and over again over a period of time before the object is learned. Where one enters the learning cycle is inconsequential, but once in the cycle, one must complete the four experiences. In many respects, research activities conducted at the academy is an excellent example of Kolb’s experiential learning cycle.

Aside from prescribing a “service experience” as the “concrete experience in the experiential learning cycle, service-learning as a pedagogy has been found to required more “structure”. The need for more structure may be due to the developmental stage of students, predominantly 17-24 years of age, participating in service-learning programs, although this possible explanation has not confirmed by research.

The need for more structured has been clearly confirmed in a longitudinal study of over 22,000 college undergraduates attending baccalaureate granting colleges and universities in the United States, by Alexander Astin and Associates (2000) on *How Service Learning Affects Students*, comparing differences between students participating in voluntary or community services (less structured) and those participating in service-learning courses (more structured). They concluded that “both the qualitative and quantitative findings provide strong support that service-learning courses should be specifically designed to assist student in making connections between the service experience and the academic materials.” In part, they conjecture that in

a course format, students are more likely to reflect on their service experiences through interchanges with peers and instructors, more likely to complete the experiential learning cycle than their counterparts in voluntary and community service. They also found that “the single most important factor associated with a positive service-learning experience appears to be the student’s degree of interest in the subject matter [of the service experience].”

Further, Astin and associates found that the students enrolled in service-learning courses during their tenure as undergraduates improved and achieved more in the areas noted below than their counterpart in voluntary and community services:

- Improvement in overall academic performance as measured by grade point average, and especially in writing and critical thinking skills;
- Greater commitment to selected values, especially activism and promotion of racial understanding;
- Increased self-efficacy, referring to a sense of self, self-confidence and self-worth;
- Taking on leadership role, as measured in initiative and interpersonal skills; and
- Clarification of career choice, tending toward service-oriented fields.

Instructors who conduct service-learning courses suspected the need for more structured even before the 2000 Astin et al study, as suggested by the definitions given to service-learning. One way to infuse more structure is the inclusion of a “facilitator”, a role added onto the traditional instructor. The role of the facilitator is to assure that service-learning students move through the learning cycle, insists on reflection through journals and papers and class discussions, and provides references to existing

knowledge to enhance learning from the service experience.

## Cognitive and Developmental Theories

Beyond active learning, it is important to know how people acquire knowledge. Over the years, many scientists have mapped various parts of the brains and their respective functions related to processing information. Figure 4 represents a consensus on the brain functions.

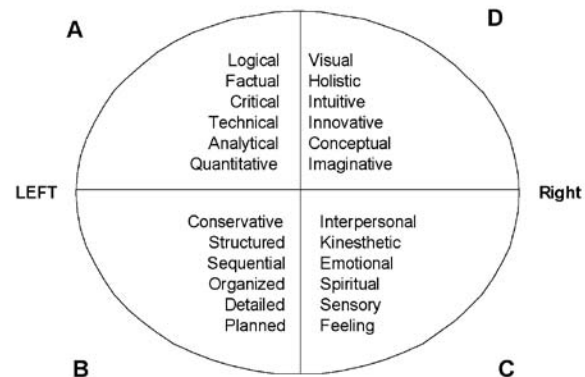


Figure 3: Brain Functions adopted from Ned Hermann (1986); Lumsdaine & Lumsdaine (1995)

Knowing which parts of the brain perform which tasks is critical, pending on the learning objectives, including the development of the “whole person” or the development of all four quadrants of the brain. It is also important to know that human brain is not static; each part is developed as one grows, subject to cultural and social environmental influences, including service-learning experiences. (Lumsdaine and Lumsdaine, 1995).

David Kolb, combining his experiential learning theory with the brain functions mapped by cognitive theorists, discovered that students engaged in different post-secondary studies develop differently in terms of their brain functions (Kolb et al, 1980).

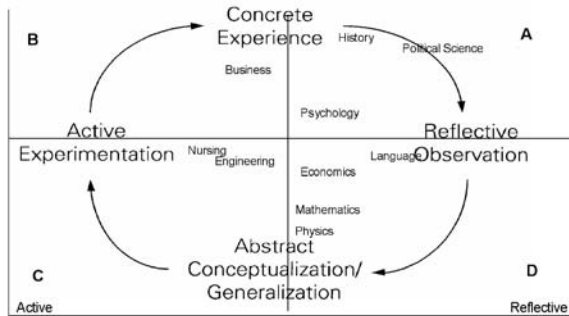


Figure 4: Based on work by David Kolb, Paul Torrance, A. Newbrough and Ronald L. Rubenzer (1984) relating work of right / left brain, teaching / learning, and professional training research.

The capital letter of each quadrant of Figure 4 is equivalent to the same lettered quadrant of Figure 3 depicting the brain functions. The academic majors scattered within the respective quadrant and the experiential learning cycle point to the degree of student development and tendency when one pursues a particular major. For example, a business major student tends to be more developed in those functions found in Quadrants A and B of Figure 3 and tend to thrive on concrete experience, more so than abstract conceptualization and generalization. Consequently, in the development of the whole person, it is not surprising that liberal arts education is found in most undergraduate programs, attempting to develop all parts of the brain.

### Conclusion by Integration of Selected Theories and Research

Integrating all the theories and research discussed, it becomes obvious on the effectiveness of service-learning in developing students as whole persons, as service-learning demands participants to function in all four quadrants of the brain, regardless of the subject of the service experience. For example, mentoring high risk youth demands those brain functions in Quadrant B and C of Figure 3. But, working with the sponsoring social agency leads one

to observe and use functions found in Quadrant A and D. Yet, to be sure that those brain functions are developed (learned), the participants must experience the entire experiential learning cycle.

Figure 5 emerges as the integrated service-learning conceptual model, having integrated research and theories discussed. This also can provide the framework for service-learning programs.

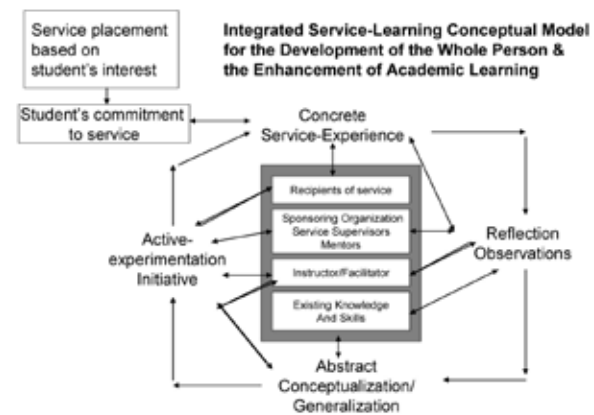


Figure 5: Integrated Service-Learning Conceptual Model

Students begin their service-learning journey by entering into a service experience related to their respective interest. They then enter into the experiential cycle. The students at each stage of their respective experience interacting with various elements noted in the center portion of the learning cycle. Each element within the center of the cycle contributes to the students learning and quality of service, and in return students contribute to each element within the center. As each student completes a cycle of the service-learning by interacting with the four elements, his/her competence in providing the service increases, while developing all quadrants of the brain. Further, as one develops and gains competence, chances are that commitment to serving increases, to the point of possibly pursuing a career

related to the service. The W.T. Chan Fellows Program founded in 2000 adopted its program design from this service-learning conceptual model. While more evaluative study on the program is needed, there are definitely encouraging indications that all fellows experienced positive impact from their participation, in ways that are suggested by the theories discussed. (Permaul, 2010)

Although existing theories contribute extensively to understanding service-learning, they are studies, based on research conducted in the United States, among its colleges and universities and students who studied in American elementary and secondary schools. Do students from Asia-Pacific Region have similar characteristics and attributes as their American counterpart? Would similar studies using samples of students and programs from another part of the world yield similar results?

A study by Prem Ramburuth (2001) suggests there might be differences. He noted differences in learning styles between Australian (with western orientation) and Asian students. And, if there are differences among students from different parts of the globe, is it due to different stages of student development or cultural orientation? Or, are the differences attributed to deviations in the theories discussed? Only more research and study can answer these questions.

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