

# **A Study of College Students' Experiences and Learning Outcomes in Service-Learning Focusing on Medical Problems of the Remote Communities in Taiwan**

**Li, Yu-Chi<sup>1</sup>, Liu, Chia-Chen<sup>2</sup> Wang, Chien-Chieh<sup>3</sup>**

<sup>1</sup> Department of Civic Education and Leadership, National Taiwan Normal University, Taiwan  
Email address: jomire@ntnu.edu.tw

<sup>2</sup> Department of Physical Education, National Taichung University, Taiwan  
Email address: jamesliu@gm.ntcu.edu.tw

<sup>3</sup> Center of Holistic Education/National Taiwan Normal University  
Email address: wangchieh@ntnu.edu.tw

## **Abstract:**

### **1. Introduction**

Over the past few decades, due to various challenges and changes in higher education, numerous faculties and administrative staffs had come to recognize the problems and stresses involved in paradigm shift of higher education, transformation of teaching methods, and the tasks of enhancing students' learning outcomes. Service learning is an effective educational approach and socially engaged teaching method to enhance students' learning outcomes and have lot of positive effects to communities; however, there is rarely research on service-learning combine with physical education. Given the main high education policy of the Taiwanese government involves encouraging college students to service in community at nearby Universities and colleges. The service-learning program in remote communities that effectively link service and learning, including a four-stage implementation process consisting of preparation, service, reflection, and celebration, enhance reciprocity, and thereby improve students' civic participation capacity. In addition, the service-learning program, which integrate into adventure and challenge in adventure education, could enhance various learning outcomes for college students. That is, The service-learning program should connect students with remote communities, promoting the basic characteristics of service-learning whereby the learning process requires faculty, students, and cooperative remote communities to consult, plan, and work together to achieve educational goals of program.

### **2. Theoretical framework/literature review**

Because service-learning is an experiential education model involving students' active participation, its methodology emphasizes the fact that faculty, students, curriculum content, and community experience are all interlinked through reflective learning, with students playing the role of active participants (Cress et al. 2005).

Ferman, White, and White (1996) proposed that a successful service-learning program should include a four-stage implementation process consisting of preparation, service, reflection, and celebration.

(1) Preparation: Teachers and students communicate with service organizations to identify their needs, and students are equipped through training and supervision with the required knowledge and skills to perform service.

(2) Service: The program content should be challenging and diversified to provide an optimal learning opportunity for participating students.

(3) Reflection: Structured reflection can link service with learning. Facilitators should design structured reflection activities throughout the process to provide inspiration and affirm students' personal achievements and experiences.

(4) Celebration: This is a process whereby students, service organizations, and faculty are able to share and assess their learning and development results, enabling students to affirm their participation and contribution and inspiring their commitment to continuing service.

In general, service-learning curricula should connect students with communities, promoting the basic characteristics of service-learning whereby the learning process requires faculty, students, and cooperative organizations to consult, plan, and work together to achieve mutual goals (Liu and Lin 2016). The present study referred to the aforementioned service-learning process and devised the service-learning experience scale to explore college students' service participation processes and investigate the effect of service experience on learning outcomes among college students.

### 3. Methods/analysis

This study integrates adventure education that students bicycle around the island of Taiwan and service-learning project in urban area to investigate the relationships between developmental process and college students' learning outcomes. Seventeen students (7 males and 10 females) attend the cycling training, workshops for leadership and communication and discuss about the medical resource issues whom from the department of Medicine, Chinese Medicine, Nursing, Pharmacy, during the 2018 academic year. After training, the service-learning program took 15 days to cycling Taiwan and medical services journey. For the concurrence of objectivity and completeness, the study was conducted with pragmatic parallel mixed methods. In quantitative research, using "The questionnaire of the experiences and learning outcomes of service-learning program" to investigate for the college students. The scale adopted a 6-point Likert scale, featuring the options "strongly agree," "agree," "a little agree," "a little disagree," "disagree," and "strongly disagree"; such options were assigned a score of 6, 5, 4, 3, 2, and 1, respectively. The statistical method is descriptive statistic. In qualitative research, the data were collected student reflections, interviews, and direct observations.

### 4. Results and Discussion

#### Service-Learning Experience

Table 1 shows that the mean score was 5.00, which was higher than the score for "agree" and indicated a relatively favorable service-learning experience. "Reflection" experience had the highest score (M = 5.26), followed by "commitment" experience (M = 5.18), "service" experience (M = 4.93), "celebration" experience (M = 4.87), and "preparation" experience (M = 4.71).

**Table 1**  
**Mean Score and Standard Deviation for Service-Learning Experience**

<b>Dimension</b>	<b>Mean</b>	<b>SD</b>
<b>Preparation</b>	4.71	.79
<b>Service</b>	4.93	.55
<b>Reflection</b>	5.26	.60
<b>Celebration</b>	4.87	.63
<b>Commitment</b>	5.18	.59

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5.00 .47

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### Student involvement of Service-Learning

Table 2 shows that the mean score was 4.90, which was higher than the score for “a little agree” and indicated students positively involved in service-learning program. “Psychomotor” domain had the highest score (M = 5.11), followed by “affective” domain (M = 5.08), and “cognitive” domain (M = 4.20),.

**Table 2**

**Mean Score and Standard Deviation for Student involvement**

Dimension	Mean	SD
Cognitive	4.50	.46
Affective	5.08	.61
Psychomotor	5.11	.70
	4.90	.45

### Learning outcomes of Service-Learning

Table 3 shows that the mean score was 5.03, which was higher than the score for “agree” and indicated a excellent learning outcomes for students. “Social Responsibility” outcome had the highest score (M = 5.28), followed by “Perspectives transformation” outcome (M = 5.22), “Critical thinking” outcome (M = 5.18), “Interpersonal interaction” outcome (M = 4.99), “Problem solving” outcome (M = 4.87), “Knowledge conversion” outcome (M = 4.84), and “Recognition for campus” outcome (M = 4.67).

**Table 3**

**Mean Score and Standard Deviation for Learning outcomes of Service-Learning**

Dimension	Mean	SD
<b>Problem solving</b>	4.87	.65
Interpersonal interaction	4.99	.79
Recognition for campus	4.67	.75
Perspectives transformation	5.22	.56
Knowledge conversion	4.84	.87
Critical thinking	5.18	.55
Social Responsibility	5.28	.61
	5.03	.56

## 5. Conclusions and contributions to theory and practice

Following conclusions are drawn from this study with quantitative analysis:

- (1) “Reflection” experience was the highest quality of Service-learning program, followed by “commitment” experience, “service” experience, “celebration” experience, and “preparation” experience
- (2) “Psychomotor” domain was the highest levels of students’ involvement, followed by “affective” domain, and “cognitive” domain.
- (3) “Social Responsibility” outcome was the best students’ learning outcome, followed by “perspectives transformation” outcome, “critical thinking” outcome, “Interpersonal interaction”

outcome, “Problem solving” outcome, “Knowledge conversion” outcome, and “Recognition for campus” outcome.

Finally, from the qualitative analysis, four topics emerged include: 1. Students noticing the reasons behind the medical problems of the remote communities; 2. Students enhancing professional competencies of medical science; 3. Students learning a team working spirit and problem-solving skill after serving in remote communities; 4. Students generating commitments and a sense of mission towards remote communities. We ensured that this service-learning program advance students’ self-responsibility, not only in attitude and understanding, but in behavior.

**Keywords:** adventure education, learning outcomes, medical service, remote communities, service learning

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## **Biographical sketch of each presenter**

Please send the biographical sketch of the presenters together with the proposal using the following format:

### **Presenter 1:**

- i. Li, Yu-Chi
- ii. Adjunct Assistant professor/ Department of Civic Education and Leadership, National Taiwan Normal University, Taiwan
- iii. Short biography (word count should not exceed 70 words)

Research & Development Manager/ Center of Holistic Education/National Taiwan Normal University

Academic Specialties: service learning, learning outcomes of college student

- iv. Contact information (address, email address, homepage)

Email: jomire@ntnu.edu.tw

Website:

Address: 162, Section 1, Heping E. Rd., Taipei City 106, Taiwan

### **Presenter 2:**

- i. Liu, Chia-Chen
- ii. Assistant Professor/ Department of Physical Education, National Taichung University, Taiwan
- iii. Short biography (word count should not exceed 70 words)

Assistant Professor/ Physical Education Office, China Medical University, Taiwan

Academic Specialties: sport pedagogy, coach leadership, wisdom theory

- iv. Contact information (address, email address, homepage)

Email: jamesliu@gm.ntcu.edu.tw

Website:

Address: 227, Minsheng Rd., West Dist., Taichung City 40359, Taiwan (R.O.C.)

**Presenter 3:**

- i. Wang, Chien-Chieh
- ii. Administrative Assistant/ Center of Holistic Education/National Taiwan Normal University
- iii. Short biography (word count should not exceed 70 words)

Master student/ Department of Civic Education and Leadership, National Taiwan Normal University, Taiwan

- iv. Contact information (address, email address, homepage)

Email: wangchieh@ntnu.edu.tw

Website:

Address: 162, Section 1, Heping E. Rd., Taipei City 106, Taiwan