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Integrating Service-learning Pedagogy into a e-Commerce Course to Investigate Student's Course Satisfaction and Continued Intention of Service-learning

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Abstract: This study presents an experimental approach for evaluating the feasibility of integrating service-learning and an e-Commerce course. Civic Participation and Interpersonal and Problem-Solving Skills are positively related to course satisfaction constructs, which are Course Value, Learning about Academic Field, Learning about the Community and Contribution to the Community. Course Value and Contribution to the Community positively affect students' service learning intentions. This study explores important issues associated with the development of an effective MIS program based on service-learning.

Key words: E-commerce, service learning, attitude, course satisfaction, interpersonal skill, intention

INTRODUCTION

Service-learning experience has been increasingly integrated into higher education over the previous decades (Kraft and Krug, 1994). Service-learning supports the learning objectives of the course through the use of community service activities. By its very nature, MIS differs from computer science in the application of pertinent science to organizational information management problems. Since so much of the content of an Information Management course is solution-oriented, as is, for example, system development in the area of system analysis and design or in a project management course, service-learning offers IS professors an excellent vehicle for teaching course content in a hands-on environment. In so doing, service-learning can achieve various goals of Information Management education. It is an excellent way to provide exposure to current business practices, reinforce classroom learning through experiential activity and increase the students' skill base (Hoxmeier and Lenk, 2003).

Service learning methodologies have been adopted and successfully implemented by many faculty members across a wide range of professional disciplines and departments, such as engineering, environmental studies and communication (Kolenko *et al.*, 1996; McCarthy and Tucker, 1999; Zlotkowski, 2001; Cohere, 2011). Most service-learning is integrated into specific

courses rather than a whole curriculum. In 2002, the department of MIS at Chung Yuan Christian University (CYCU) became the first MIS department in Taiwan to include service-learning in their undergraduate and graduate programs. Over the last five years, the MIS Department has been integrating service-learning into most of the courses in its program. Student retention has become one of the most critical elements of the program's success as the program faces the challenge of maintaining students' motivation to enroll in service learning courses.

This study examines an acceptance model to determine which variables were associated with student retention by the MIS department of CYCU and Grace College of Philippine. The data in this work were obtained from students who were involved in community service in a e-commerce system development course. In this course, students provide enterprises and non-profit agencies e-commerce information systems solutions and related services, which are related to the course topics, including SDLC (Systems Development Life Cycle) for system analysis and design and for software project management. The goal of this investigation was to determine whether the differences in MIS students' civic attitudes and personal skills at the beginning of the course were related to their satisfaction at the end of the course and then to influence their intentions to engage in service-learning in the future.

LITERATURE REVIEW

Students' acceptance of service-learning: The research questions in this study fall into two categories. If students are unsatisfied, they will have no intention of taking additional courses that have a service-learning requirement. Students must not only passively accept but also develop an active intention and commitment to expose themselves to this increasingly important teaching approach. Astin and Sax (1998) indicated that a student's previous participation in volunteer work while in high school was the most important factor in predicting his or her participation in college level service-learning. Another study found that students are not committed to assigned projects because they do not value them (Stanton, 1994). Roose *et al.* (1997) examined 15 variables to determine which were associated with student retention. Among these variables, involvement in community service was the strongest. Based on these findings from previous studies, the following hypothesis is proposed:

- **Hypothesis 1:** Satisfaction with a previous service-learning course has a positive effect on student intention to engage in service-learning in the future

Previous research conducted in e-learning environments has suggested a variety of factors affecting user satisfaction (Sun *et al.*, 2008; Macedo-Rouet *et al.*, 2009; Jiao and Miao, 2010; Golding, 2011). However, few studies have investigated the factors affecting the course satisfaction of service-learning. A self-reported survey was utilized to gather descriptive information about students' satisfaction with service-learning courses. Civics Attitudes and Skills Questionnaires (GASQ), developed by Moely *et al.* (2002), were employed. The CASQ measures students' opinions of their courses on four course satisfaction scales (Simons and Cleary, 2005).

- **Course value:** Importance or usefulness of course content
- **Learning about academic field:** Degree to which students understand and apply concepts from the course and their interest in the field
- **Learning about community:** Extent to which students have learned about the community
- **Contribution to community:** Students' perceptions of usefulness of their service activities to the community

The cause of the success of service-learning in IS pedagogy is the idea of "win-win-win". The projects

benefit all three parties that are directly involved-student, nonprofit organization and university. Previous studies have demonstrated that attitudes to civic responsibility are related to the satisfaction of the student when students are required to devote time to a community (Mayhew, 2000), suggesting the following hypothesis:

- **Hypothesis 2:** Students' positive attitudes to civic responsibility have a positive effect on their satisfaction with service-learning courses

In this study, attitudes toward civic responsibility are separated into Self-Efficacy toward Service and Civic Participation, which are measured using a system that was developed in a previous study by Schmidt, Webber, Sleeper and Schneider (Weber *et al.*, 2004):

- **Self-efficacy toward service (SETS):** The belief that one can have an impact on their community
- **Civic participation (CP):** The desire to become involved in supporting the less fortunate by volunteering time and money to those in need

The primary concern of faculty members who teach IS courses with a service-learning requirement concerns the ability of IS students to use their interpersonal skills during the service-learning project. Most of our IS courses' service-learning projects involve students working together in inter-disciplinary project teams. The authors' experience suggests that lack of interpersonal skills may lead to an unsatisfactory service-learning experience and cause the project to fail, suggesting the following hypothesis:

- **Hypothesis 3:** Students' interpersonal skills have a positive effect on their satisfaction with a service-learning course

We suggest that two interpersonal skills may contribute to students' satisfaction toward their service-learning experience. First, in most educational environments, some students lack interpersonal and problem-solving skills. Second, some students may lack the leadership skill that is required in a project. This study adopted CASQ to measure students' interpersonal and problem-solving skills and leadership skills:

- **Interpersonal and problem-solving skills:** Students' abilities to work cooperatively, think logically and solve problems
- **Leadership skills:** Students' abilities to lead a group of people

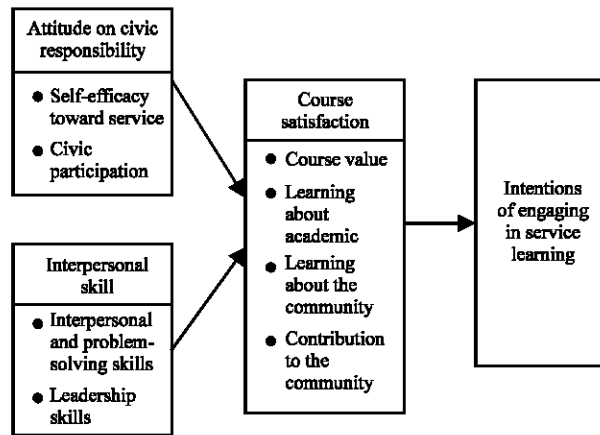


Fig. 1: Research model

Figure 1 displays the research model that was empirically tested herein. This model was constructed to answer research questions that were raised earlier and is derived from the discussions described in this section.

METHODS

Characteristics of sample and study context: A survey of 139 students enrolled in a system development course in an MIS department at a comprehensive university was conducted. In this course, students were involved in community service that provided enterprises and non-profit organizations with e-commerce information systems solutions and related services. All student subjects were asked to complete questionnaires in reference to their attitude toward civic responsibility and interpersonal skills before the semester and complete questionnaires in reference to their satisfaction with the course and their intention to engage in service-learning at the end of the semester. Completion of the survey was voluntary. A total of 135 surveys were completed, with 126 usable responses returned, for a response rate of 93%. The age range of the sample was 21-25 years old. Of the 126 respondents, 69 were female and 57 were male. None of the subjects had any prior service-learning experience. Their service was performed at 21 different community sites, including schools, hospitals, farms, government agencies and nonprofit agencies.

Instrument development: The survey questionnaire covered a combination of items derived from earlier studies as well as new items. Schmidt, Webber, Sleeper and Schneider's (Weber *et al.*, 2004) questionnaire on attitude toward civic responsibility, the CASQ measurement (Moely *et al.*, 2002) of interpersonal skills

and the measurement of course satisfaction that was proposed by Simons and Cleary (2005) were used as the foundation for the development of the survey instrument. Subjects responded to items, except for items intended to collect demographic data, on a seven-point Likert-type scale, whose end points represented "strongly disagree" and "strongly agree".

The newly developed survey was given to a pilot group of 32 MIS students in a system analysis and design course. After the survey was completed, students had an opportunity to give verbal and written feedback on the survey instrument. Their feedback was taken into account in producing the final version of the survey.

Measures: The reliability and validity of the instrument were evaluated. Cronbach's alpha was calculated for each scale to ensure internal consistency among the items. The reliability of the factors was specified by Cronbach's alpha values of between 0.77 and 0.92. The reliability of the sample instrument was reasonable ($\alpha > 0.70$).

RESULTS AND DISCUSSION

All assumptions were confirmed. These tests correspond to H1-H3. Figure 2 depicts the tested null hypotheses, the t statistic and the significance level, which determine whether the hypotheses were supported.

Civic participation and interpersonal and problem-solving Skills were positively related to course satisfaction constructs, which are Course Value, Learning about Academic Field, Learning about the Community and Contribution to the Community. Course Value and Contribution to the Community positively affected

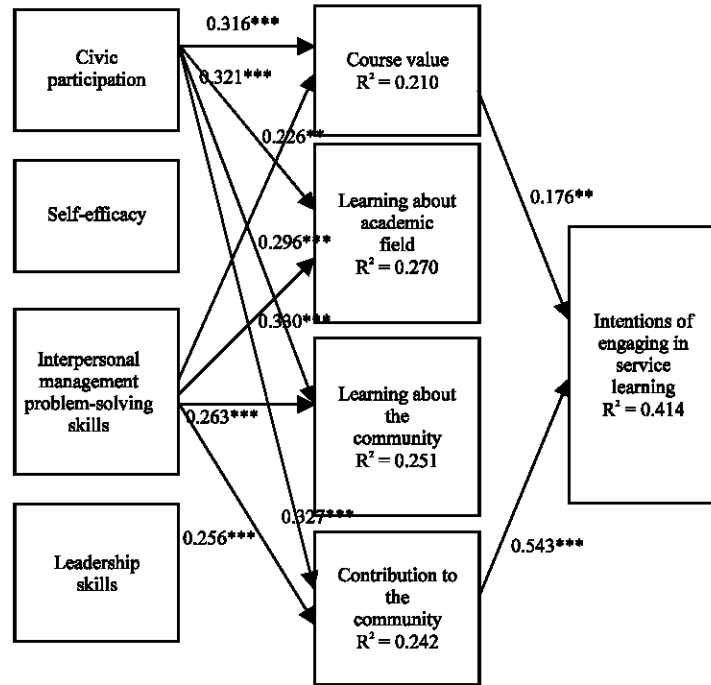


Fig. 2: Regression analysis of the service-learning adoption model, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

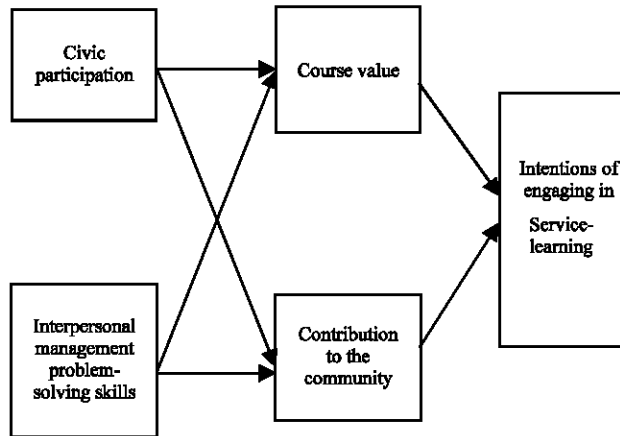


Fig. 3: Service-learning adoption model

students' service learning intentions. Contribution to the Community was a better predictor than course value. H1-H3 are partially supported (Fig. 3).

CONCLUSION

Four research factors were incorporated into the research model as potentially affecting students' intentions to engage in service-learning courses. They were Course Value, Learning about Academic Field,

Learning about the Community and Contribution to the Community. This study finds that, contradicting common assumptions, the major reason for students' taking more service-learning courses is experience of meaningful service to a community rather than the academic learning. As evident from the results, for the MIS students that participate in service-learning programs, the factor that most strongly motivates them to take another service-learning course is the perception of having contributed to the community in a prior service-learning

course. Another significant, yet less influential factor is Course Value, which represents the general value or usefulness of the student's experience of a prior course. Academic gains (Learning about the Academic Field) and knowledge of the community (Learning about the Community) did not significantly affect the students' intentions to engage in the service-learning courses.

Two characteristics affect students' satisfaction with service-learning courses. This work finds that students with greater Civic Participation tend to find the service-learning course more satisfying. Students with better Interpersonal and Problem-Solving Skills also found the course more satisfying. One possible reason is that the students with greater Civic Participation may spend more time and effort on their service-learning tasks and thus perceive that they have learned more and contributed more to the community. Because in service-learning students must work with other community members to complete their projects, students with higher Interpersonal and Problem-Solving skills tend to find themselves more satisfied with the course components and thus experience more overall satisfaction.

Interestingly, Self-efficacy and Leadership Skills do not significantly influence students' satisfaction with service-learning courses. Students with high service-learning Self-efficacy at the beginning of the course may have expected that they would be contributing much to the community and the results of the service-learning components of the courses, which were typically website construction projects, may not have met their expectations. Leadership skills was not significantly related to satisfaction with the course, perhaps because a student's perception of satisfaction arises from working with other members in the project, rather than acting as a leader of projects.

The service-learning acceptance model tested in this work was empirically assessed in only one context. The generalization of the results reported herein goes beyond the current sample, service-learning context and richness antecedents. Researchers can use the model to evaluate differences between groups of different genders. The outcomes of service-learning for students in various courses were compared. Future studies would be valuable to understand potential implications of other antecedents of the service-learning adoption model. However, the proposed research model explains and predicts students' satisfaction with courses and their intentions to engage in service-learning. Based on this understanding, educational institutions and instructors can determine how to improve students' intentions to engage in service-oriented MIS programs.

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