

The Relationship between University Learning Experiences and Students' Problem-solving Efficacy in the University of Social Sciences and Humanities of Ho Chi Minh City

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ABSTRACT— *Problem-solving efficacy has become the means to rejoin content and application in a learning environment for basic skills and their application in various contexts. The primary purpose of this study was to ascertain the students' problem-solving efficacy and analyzed how students' problem-solving efficacy was affected by their college learning experiences. The study used a self-report questionnaire with 169 third-year students at the Ho Chi Minh University of Social Sciences and Humanities. The findings of this study are found to answer three research questions. Firstly, results of this study indicated that students' problem-solving efficacy was within the range of "average" to "high" response. Secondly, there were no existing significant differences between male and female students' problem-solving efficacy. Finally, student background, teaching approach, and curriculum emphasis of students showed positive effect on their problem-solving efficacy.*

Keywords— University learning experiences of Ho Chi Minh City, problem-solving efficacy, university students, Vietnamese higher education

1. INTRODUCTION

Problem-solving is such an important competency that it focuses on its students becoming effective problem solvers by applying logical, critical and creative thinking to a range of problems (Wilson, 1993). Problem-solving can provide the site for learning new concepts and for practicing learned skills (Kilpatrick, Swafford & Findell, 2001). Educators do not only focus on teaching students what established knowledge to learn, but also teaching students how to think and solve new problems. The development of problem-solving efficacy is therefore an important mission for faculty to develop for their students (Pajares & Kranzler, 1995). However, some studies recognized that the proportion of Vietnamese students who acquired skills is very low. Several studies (Luong, 2010; Oliver, 2002; Tran, 2009) have noted that graduate students from universities and colleges or vocational education have to be retrained to improve their skills and abilities.

The development and the use of problem-solving efficacy also improve learning. According to Rossman (1993) when students use problem-solving efficacy, the role of the student changes from a passive recipient of information to a participant in the creation of understanding. The literature encouraged that the development of problem-solving efficacy are necessary for career success (Gustin, 2001; Zekeri, 2004). The study of Lone Star College surveyed 450 students for skills or efficacies to the college education that students should possess problem-solving efficacy to survive a tough and real world (Hamza & Griffith, 2006).

When students enter university, they are primarily involved in curriculum learning in the class (Baird, 1990). Research recognizes that students who frequently practice active learning perceive themselves gaining knowledge and skills from their higher education and view their university experiences as rewarding (Braxton et al., 2000). Although university students acquire knowledge and skills primarily through curriculum learning contributes to university student outcomes (Wu, 2012). According to Breiter, Clements and Pavesic who are emphasized the importance of problem-solving efficacy as the key focus of future curriculum (Breiter & Clements, 1996; Pavesic, 1991) and considered as the heart of learning (Schommer-Aikins, Duell & Hutter, 2005). As a sequence of learning opportunities, curriculum has several aspects and indications such as plans and intentions, patterns of classroom activities, and textbooks (Schmidt et al., 2001).

University recognizes the importance of creating safe and open classroom environments to foster student learning and development. The curriculum can contribute to valued outcomes of college students (Bowen, 1977; Chickering & Rieser, 1993). According to Braskamp et al., (2006) curriculum is a fundamental component of a college commitment to holistic student development and what and how students learn which are interdependent. Problem-solving efficacy has become the means to rejoin content and application in a learning environment for basic skills and their application in various contexts. Today, there is a strong movement in education to incorporate problem-solving as a key component of the curriculum (Krikley, 2003). In quality assurance terms the learning outcomes and theoretical knowledge in the curriculum need to be demonstrably connected to practice efficacies including problem-solving efficacy (Shakespeare & Hutchinson, 2007).

There is a lack of literature on college students' problem-solving efficacy and university learning experiences in Vietnam. Thus, the primary purpose of the present study was to explore how college learning experiences affect problem-solving efficacy of Ho Chi Minh University of Social Sciences and Humanities. The results of this study can be useful to administrators and teaching staff in the Ho Chi Minh University of Social Sciences and Humanities, and contributes to fill in the literature gap of Vietnamese university student problem-solving efficacy development. In view of the aforesaid points, this study seeks to address the following questions:

1. How is Ho Chi Minh University of Social Sciences and Humanities students' problem-solving efficacy in general?
2. Do significant differences of problem-solving efficacy exist among male and female students?
3. How is Ho Chi Minh University of Social Sciences and Humanities students' problem-solving efficacy affected by their university learning experiences?

2. METHODOLOGY

2.1 Dependent and independent variables

The problem-solving efficacy dependent variable was constructed from five characteristics: (1) data analysis, (2) data collecting, (3) critical thinking, (4) present solution, and (5) generate innovation. As a results shown in Table 1, factor analysis revealed that all five characteristics of dependent variable had factor loading (0.693 – 0.844) greater than the threshold level of 0.6; the internal consistency analysis yielded Cronback's alpha coefficients of 0.847, and cumulative explanation of 62.380 % which are significantly higher than the 0.6 (60%) principal guideline, indicating satisfactory reliability for this student competence measurement (Hair et al., 2006). Hence, based on the validation of construct reliability, this study's construct for problem-solving efficacy is reliable.

Table 1: Factor Analysis Result of the Five Elements Constructing Students' Problem-Solving Efficacy

Variables	Range of scores	Factor loading	Cumulative explanation (%)	Cronbach's alpha
Data analysis		0.844		
Data collecting		0.757		
Critical thinking	1 – 5	0.805	62.380	0.847
Present solution		0.840		
Generate innovation		0.693		

Note. Data were analyzed with principle component analysis.

The independent variables in this study included four variable blocks: student background, teaching approach, curriculum emphasis, and learning engagement. The first block is student background including gender, class ranking, and family income. The second block is teaching approach including one-way instruction, group discussion, and practice/experiment. The third block is curriculum emphasis including memory emphasis, integration emphasis, and application emphasis. The last block is learning engagement including levels of involvement in class activities, frequency of library use, and time spent on course work per week.

2.2 Sample and instrument

This study selected a random sample of 169 students at the Ho Chi Minh University of Social Sciences and Humanities (USSH), including 103 (61%) female students and 66 (39%) male students. Participants in this study were

third year full-time students who were studying on campus. According to Huang and Chang (2004), third year students are considered the best population for observing student involvement and development at the university.

This study used a self-report questionnaire to gather data. A structured questionnaire was constructed to provide answers to three research questions including problem-solving efficacy, student background, teaching approach, curriculum emphasis, and learning engagement. The survey consisted of a series of questions using a 5-point Likert scale.

2.3 Data Analysis Method

This study used SPSS 13.0 software to process the data analysis. The statistical methods were employed to answer the three research questions. Descriptive analysis was used to answer the first research question of “How is Ho Chi Minh University of Social Sciences and Humanities students’ problem-solving efficacy in general?”, analysis of variance (ANOVA) was used to answer the second research question of “Do significant differences of problem-solving efficacy exist among male and female students?”, and multiple regression method was used to answer the last research question of “How is Ho Chi Minh University of Social Sciences and Humanities students’ problem-solving efficacy affected by their learning experiences?”

3. RESULTS AND DISCUSSION

3.1 The Level of Students’ problem-solving efficacy in the University of Social Sciences and Humanities – Ho Chi Minh City

The results of Table 2 displayed the means (M), standard deviations (SD), and ANOVA of students’ problem-solving efficacy at the University of Social Sciences and Humanities of Ho Chi Minh City and to answer the first and second research question of this study. As shown in Table 2, students’ average problem-solving ranged from “average” (point 3) to “high” (point 4) in the 5-point Likert’s scale employed in the questionnaire with mean (M) = 3.45, and standard deviation (SD) = 0.54

Table 2: Results of Means, Standard Deviations, and ANOVA of students’ problem-solving efficacy in the USSH

	M	SD	Gender	
			F	Sig.
Average	3.45	0.54		
Female	3.38	0.54	3.784	0.053
Male	3.55	0.52		

The results exhibited that male students’ problem-solving efficacy had higher than female students with M = 3.55, SD = 0.52 and M = 3.38, SD = 0.54, respectively. The results showed that there were no significant differences in male and female problem-solving efficacy (F = 3.784, p > 0.05).

The results of this study differ from previous studies, such as Luong (2010), MOET (2001), Nguyen (2005), and Valley and Wilkinson (2008) which showed that Vietnamese college students are weak in problem-solving efficacy. These studies were based on large scale surveys including public and private universities and even employment. The current study, however, was conducted with students at only University of Social Sciences and Humanities of Ho Chi Minh City – a group of prestigious public universities for the social sciences in Vietnam. The difference between this current study and the previous ones is probably due to the fact that the sample examined in this study consists of better students. However, both this study and the previous ones found that the problem-solving efficacy of Vietnamese university students is unsatisfactory. Problem-solving is important for students to become effective problem solvers in their profession (Hamza & Griffith, 2006; Wilson, 1993) and for later career success (Froman, 2002; Gustin, 2001). Thus, the Vietnamese government should invest more resources in enhancing problem-solving efficacy for all students when constructing an instructional program.

3.2 The relationship between Students’ problem-solving efficacy and university learning experiences

The results of Table 3 showed the multiple regression of university learning experiences on students’ problem-solving efficacy and to answer the third research question of this study. As shown in Table 3, two of three items in student’s background, gender ($\beta = 0.147$, p < 0.05), and class ranking ($\beta = 0.250$, p < 0.01), as well as teaching approach of employing experiment ($\beta = 0.170$, p < 0.05), curriculum emphasizing integration ($\beta = 0.218$, p < 0.001) significantly advanced student’s problem-solving efficacy. The results of Table 3 recognized that the regression model proposed by this study explained 23.8% of students’ problem-solving efficacy at the University of Social Sciences and Humanities of

Ho Chi Minh City ($R^2 = 0.238$). No other independent variable had significant effect on students' problem-solving efficacy.

Table 3: Multiple Regression Results of students' problem-solving efficacy at the Ho Chi Minh University of Social Sciences and Humanities

Independent Variables	University of Social Sciences and Humanities	
	Beta (β)	
Student background		
gender		.147*
class ranking		.250**
family income		
Teaching approach		
one-way instruction		
group discussion		
employing experiment		.170*
Curriculum emphasis		
memory emphasis		
integration emphasis		.218**
application emphasis		
Learning engagement		
levels of involvement in class activities		
frequency of library use		
time spend on course work per week		
Adjusted R^2		0.238

Note. * $p < .05$. ** $p < .01$. *** $p < .001$.

Students' problem-solving efficacy at the University of Social Sciences and Humanities of Ho Chi Minh City is significantly influenced by their background and college learning experiences. There are different affecting variables at the Ho Chi Minh University of Social Sciences and Humanities. Based on these differences, Ho Chi Minh University of Social Sciences and Humanities should design interventions to enhance students' problem-solving efficacy. The University of Social Sciences and Humanities of Ho Chi Minh City may very well consider and develop curriculum emphasizing integration, and teaching approach of employing experiment. Integration of the curriculum has been described to increase instructional time and to enhance the learning of students (Jacobs, 1990). Further, Colvin and Ross (1991) suggested that integration of the curriculum can change teaching techniques from the dissemination of isolated facts to a technique to help students construct knowledge.

4. CONCLUSION

Many studies showed that curriculum learning has a profound effect on student achievement and plays a crucial role in enhancing students' problem-solving efficacy. This study reveals reliable links between students' problem-solving efficacy and various university learning experiences at the Ho Chi Minh University of Social Sciences and Humanities. Results of this study contribute to fill in the literature gap of Vietnamese university students' problem-solving efficacy development. The study also found that students' problem-solving efficacy at the University of Social Sciences and Humanities of Ho Chi Minh City was within the range of "average" to "high" response. Hence, university management and policy maker should pay special attention to enhancing their students' problem-solving competence. Moreover, this present study also found that students' problem-solving efficacy at the University of Social Sciences and Humanities of Ho Chi Minh City correlated with their background and university learning experiences. University management should take more interest in curriculum emphasizing integration and teaching approach of employing experiment than other factors in this study. In the university, in order to make a policy for the instructional program and to select a teaching method or to evaluate the studying result of the student, the experts or the program makers of University of Social Sciences and Humanities of Ho Chi Minh City should be notably concerned about this factor. If we must decide a universal intervention to enhance problem-solving efficacy of students across universities in Vietnam, student curriculum emphasizing integration and teaching approach of employing experiment should be considered.

It is hope that the findings of this study may be useful for university management to evaluate their academic learning by the effect on improving students' problem-solving efficacy. On the other hand, they also need adjust the strengths and weaknesses of the academic learning to meet the needs of the country. In the process of constructing an instructional program, University of Social Sciences and Humanities of Ho Chi Minh City should design better institutional policies and select advanced academic learning strategic to not only provide background knowledge, but also develop students' efficacy for future jobs.

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