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## The results of Self-Directed Learning for Project Evaluation Skills of Undergraduate students

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### Abstract

The classroom action research was to study the results of self-directed learning for project evaluation skills of undergraduate students. Subjects were 50 undergraduate students. Research instruments comprised: a) 8 week lesson-plans for the experiment, b) student readiness for a self-directed learning scale, c) a scale for measuring project evaluation skills, and c) a questionnaire on teaching strategy for self-directed learning. The findings revealed high scores for students with regards to readiness for self-directed learning. After employing the teaching strategy for self-directed learning, students reported higher scores for their knowledge of project evaluation, compared to teaching strategy for self-directed learning. Students' project evaluation knowledge and skills were significantly correlated. Overall, students' scores for their satisfaction regarding the teaching strategy for self-directed learning were high.

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### 1. Introduction

There have been efforts in learning development through instruction at higher education level to emphasize learning rather than teaching and to focus on getting students to acquire knowledge by learning and how to learn rather than be given instruction; therefore, instruction management has so far followed the principle that all students should be able to learn and develop themselves, and that the student is regarded as the most important person in the learning process. Moreover, the labor market still requires graduates with the personal attributes of being able to think critically and creatively, as well as having problem solving skills among others.

Thus, classroom instruction management is significant and it is very important that teachers develop their students in the process of self-directed learning. This is because it is regarded as a learning process through which students are responsible for their own learning. It is the students who determine the needs and purposes of such learning, as well as design the experience and resources which support it, and it is they who ultimately evaluate

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themselves. The instructors take on more the role of facilitators rather than teachers teaching directly, through the creation of an atmosphere conducive to student-centered learning.

At present, self-directed learning has been accepted by scholars both in and out of the school system, because the learners utilizing self-directed learning are able to learn better and have a greater capacity to remember what they learn over a longer period of time. This is in addition to their being able to apply their knowledge better than those learners who only wait to receive such knowledge directly from their instructors. According to past research, self-directed learning has achieved positive results in several aspects, such as the instruction, operation and lifestyles of the individual (Cloud, 1992; Komsun, 1997; Kamneungpol, 1999; Langston, 1990).

This research employed project evaluation. This is the process of the systematic investigation and analysis of all the information relating to the project. However, the project evaluation not only evaluated all of the projects as a whole, but each part of the project also had to be evaluated; namely the Inputs, Processor and Outputs. Each part, and the overall project, consisted of three crucial stages: 1) the study and consideration of the details of the purposes of the project, 2) the study of the possibility of information, 3) collection and action through information and resources, and 4) analysis, interpretation of meaning and conclusions on results. Moreover, for each project evaluation, the project had to be considered significant in terms of the time period over which the project was carried out.

Hence, the researcher emphasized the study of instruction, focusing on self-directed learning, to be able to develop the students' skill of project evaluation. It is expected that the students learn from their own assessment and through their own selection of learning methods and information resources, in order to help the students learn most effectively.

## **2. Purpose of Research**

The main purpose of this research was to study the results of instruction by emphasizing self-directed learning that affected the skill of project evaluation by undergraduate students.

## **3. Conceptual Framework**

Many results of the studies on learning by self-directed learning. Most research found that learning by using the self-directed learning technique can develop learning achievement results. This is in accordance with Langston (1990), who researched the learning achievement results of political science students at college level, who took part in the self-directed learning project and teacher-centered learning; the results revealed that the learning achievement and satisfaction of the students participating in self-directed learning was higher than those taught through teacher-centered learning. This also concurs with Cloud (1992), who found that the learning achievement results through self-directed learning were positive. Moreover, Jones (1994) revealed that learners who studied using the self-directed learning technique received higher learning achievements. Additionally, Komsan's (1997) findings supported these research results.

For this research, the focus was on the skill of the learners to be able to correctly conduct project evaluation and be able to apply this in future operations. Hence, the instructional technique, which helped learners develop self-directed learning and which could be practiced in real situations was the self-directed learning technique. This research thus utilized the conceptual framework as shown in Figure 1.

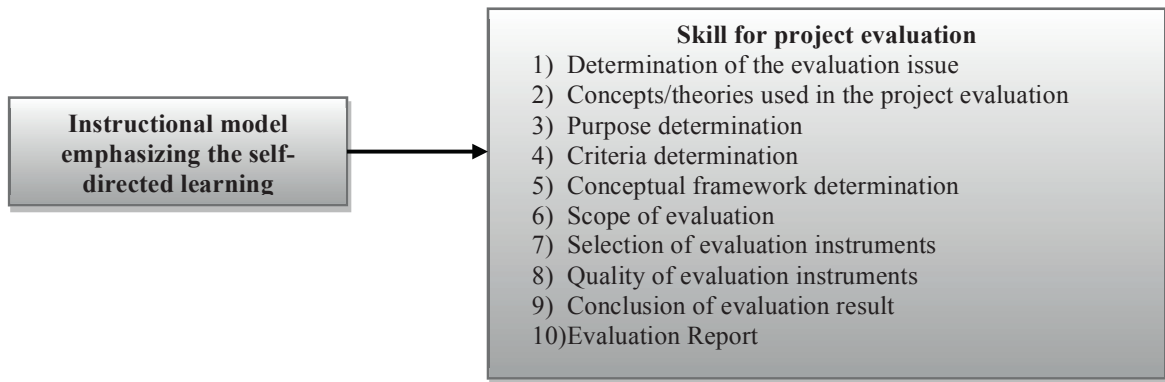


Figure 1 Conceptual Framework

#### 4. Scope of Research

##### 4.1 Scope of content

The content used in this research concerned the project evaluation, which consisted of the analysis of ideas and project evaluation, purpose determination or issue of evaluation, criteria determination and indicators, conceptual frame determination and evaluation scope, evaluation instruments, evaluation conclusion and evaluation report writing.

##### 4.2 Scope of variables

The independent variable was the instruction, emphasizing self-directed learning. The dependent variable was the project evaluation skill.

##### 4.3 Scope of time

This research was conducted in the second semester of the 2011 academic year from September– November, 2011.

#### 5. Research Methodology

##### 5.1 Sample

The research sample was 50 undergraduate students in the third year of the Department of Sociology's Urban Community Development program, in the Faculty of Social Science at Srinakharinwirot University, who had registered on the SO344 Data Management Urban Community Development course in the second semester of the 2011 academic year.

##### 5.2 Research instruments

The instruments used in this research included:

1) An instruction plan on project evaluation, using the instructional model emphasizing self-directed learning. The period for this instruction lasted eight weeks.

2) The knowledge tests about project evaluation for two sets with 30 items parallel to each other. The tests were used for pre-study and post-study. The tests had four multiple choices. The right answer received a score of 1 while a wrong answer received a score of 0.

3) The evaluation form of contribution quality was done by determining each score of the quality level of each element evaluated (Rubric Score), which comprised of three levels: 3 – referring to good quality, 2 – referring to moderate quality, and 1 – referring to quality which should be improved. The elements used for the evaluation included: 1) determination of the issues for evaluation, 2) concepts/theories behind the project evaluation, 3) purpose determination, 4) criteria determination, 5) framework determination, 6) evaluation scope, 7) selection of instruments for evaluation, 8) quality of instruments for evaluation, 9) conclusion of evaluation, and 10) report of evaluation results; 10 items in total with a total score of 30. The score of the evaluation model of contribution quality of project evaluation was approved by three experts in terms of educational measurement and evaluation field. It was found that the Rubric Score was leveled as appropriate determination.

4) The questionnaire concerning the self-directed instruction was created by the researcher. The question items used a 5-rating scale for a total of 10 items.

All instruments were tested for their quality by experts and subsequently adjusted according to their suggestions, before being used for data collection.

5.3 *Data Analysis*: The basic statistics and inferential statistics

## 6. Research Results

**The results of test analysis concerning the project evaluation both pre- and post-instruction using self-directed learning** showed that the average of students' knowledge of pre-learning management through self-directed learning was equal to 14.14 (sd = 3.56), while the average of students' knowledge of post-learning management through self-directed learning was equal to 21.76 (sd = 2.50). Also, the difference in the test result average between the pre- and post-knowledge according to the test oft-dependence was found to be of statistical significance at the .01 level, as shown in Table 1 below:

**Table 1** Average score of pre- and post-tests and difference test

Knowledge Test	Average Score	t	df	Sig
Post-test	21.76	18.41	49	.00
Pre-test	14.14			

**For the project evaluation skills, measured by the quality of project evaluation results through post-self-directed learning**, it was found that the average value of the quality of the project evaluation results was equal to 26.76, with a maximum score of 30 and minimum score of 20 and found that the learner had a higher quality score of project evaluation results than the criteria determined at a statistical significance at the 01.level as shown in Table 2.

**Table 2** Score of project evaluation skills (the criteria of test score was equal to 20)

	Tested score level	Score average	t	df	p
Project Evaluation skills	20	26.76	20.550	49	.00

**For the relationship between the test results of knowledge measurement concerning the project evaluation and the measurement result of project evaluation quality through post-self-directed learning**, it was found that there was a relationship with a statistical significance at the .01 level and with a relationship at the moderate level ( $r_{xy} = 0.58$ ).

**Overall, regarding satisfaction of instruction by self-directed learning**, there were learners who were satisfied with the instruction using the self-directed learning technique at a high level (Mean = 3.67, SD = .33). When considering each item, it was found that the learners only agreed with two question items at the moderate level. These were that self-directed learning gave the learners more responsibility (Mean = 3.40, SD = .86) and that self-directed learning helped learners be able to plan their learning (Mean = 3.74, SD = .72). The details are shown in Table 3.

**Table3** Analysis of the results of satisfaction of self-directed learning

Question items	Mean	SD
1. Self-directed learning is interesting.	3.82	.96
2. Self-directed learning is appropriate in its application to instruction.	3.58	.86
3. Self-directed learning gives you more responsibility,	3.40	.86
4. Self-directed learning helps you generate creative ideas.	3.54	1.01
5. Self-directed learning enhances your confidence to learn new things.	3.58	.91
6. Self-directed learning encourages you to use thinking skills more.	3.74	.94
7. Self-directed learning helps you develop learning skills	3.58	.78
8. Self-directed learning helps you be able to plan the learning plan.	3.74	.72
9. Self-directed learning helps you be able to analyze problems and find a way to solve them.	3.82	.96
10. Self-directed learning can be applied to learning in a variety of ways.	3.58	.86
<b>Overall image</b>	<b>3.67</b>	<b>.33</b>

**Regarding the informal interview results concerning instruction using self-directed learning**, it can be concluded that the learners were more interested in studying and this helped them generate their own creative ideas for learning, and that they were able to plan the content management by themselves. Moreover, they could learn better. This is reflected in the following comments: “*I should have had more time to learn than this, so that I could have practiced in a real situation for every step and would have learned every step in detail*”; “*It’s fun. I could think using my own ideas because in the past I only learned by lecture. It was boring, but with this course I could design, think, and plan the content by myself so I could learn better*”; “*That’s fine. When I have to work, I know how I should plan. I can think and plan learning by myself, so it helps me learn better*”.

## 7. Discussion

The research found that learning management through the self-directed learning technique could develop the learners’ ability in project evaluation. This was because self-directed learning was a kind of learning model by which the learners could plan the learning by themselves by identifying their learning needs, determining the learning goals in each class period, selecting the learning methods, seeking knowledge and analyzing the information. The teachers only supported, gave suggestions and helped the students in any step when appropriate and necessary. Also, the teachers would evaluate the students (Khammanee, 2011). This was instruction whereby teachers taught less but supported the learners to learn more. The teachers urged the students to be able to gain knowledge by themselves. Although the role of teaching seemed to be less active, the role of planning and designing the activities, instruction, materials and learning resource preparation, as well as preparing questions which motivated the students to generate their learning by themselves was greater (Angkanapatarakajorn, 2012). Regarding the comparison of the result analysis on knowledge about project evaluation by pre- and post-instruction using self-directed learning, which differed in statistical significance, past research has found that self-directed learning affects learning achievement and can develop students to achieve learning at a higher level (Cloud, 1992; Komsun, 1997; Kamneungpol, 1999; Langston, 1990).

Moreover, self-directed learning was significant in bringing about a more effective approach in lifestyle. It helped learners be highly motivated, flexible, creative, and be able to adjust their behavior when working with others, as well as know the reasons, be able to think and analyze and adjust the method of their own thinking. In addition, they were able to acquire the learning method, be able to learn more and better, and to better apply the benefits from learning, which helped

the students be successful in learning. Moreover, such learning could respond to inter-personal differences, which was in accordance with the development of psychological and human attributes, as well as new educational developments emphasizing the learners to be responsible for learning themselves. This is necessary, as part of basic education, to prepare learners to gain experience of this learning style as the basis of life-long learning (Komsan, 1997).

Self-directed learning was an appropriate technique through the instruction of project evaluation, because the nature of the course and aspects of skills practice made the learners think and make decisions about related information, such as the data storage used for operations according to the project in every style and step, the data collection for analysis, the information used for making decisions concerning projects, as well as the possible improvement of information obtained from the data adjusted for the operation. It can be seen that the learners had to make much use of the skills. If they are supported by their teachers in terms of consultancy, giving advice according to their needs, this could help the students achieve better results. Moreover, self-directed learning remains a style resulting in mastery learning. According to Wijitvechapaian (2009), through mastery learning everybody can be equally successful in learning if he/she receives advice at the appropriate time, to clearly understand the real core of the content of the courses, by knowing the objectives of instruction, teaching and learning, as well as the assignment. There was the division of lessons into sub parts to help the learners be able to follow the subject courses in-depth and fully. The instructors or teachers performed their duty as trainers by considering inter-personal differences, because each person had a different time for learning. When the students could pass the criteria of content evaluation in any course, they would be allowed to step up to another level of study.

Although overall, the research revealed that the knowledge and skills of project evaluation were higher than pre-learning and passed the pre-school and given criteria. In reality, under the research conditions, the researcher gave feedback concerning the knowledge and skills of project evaluation to the learners consistently. The researcher evaluated the progress of learners over a two week period and gave constant feedback; there had been investigation of the project evaluation results from the report and from presentation in front of the class. This helped the students better understand the knowledge base of the project evaluation. This is reflected in the students' comments: "*I prefer a lecturer who gives feedback to me so that I will know whether I did something right or wrong; otherwise, I would do it continuously without realizing whether it was right or wrong*"; "*I should learn this for the whole semester, so that I will have more time and can do it by myself, because it's necessary when I have to take a training course. Also, it will be used when I have to go to work*", amongst others.

However, this research still had several weaknesses. These included the instruction using self-directed learning being conducted under limitations, in which the learners had to express their project evaluation ability in groups; therefore, the evaluation results of the skill of project evaluation was the overall consideration of the group and there was no analysis of skills of the individual learners. Sometimes, the students did not cooperate with one another when working in the group or did not help much. The researcher tried to resolve this problem by observing and talking informally during the evaluation of the progress of each learner group.

## 8. Recommendations

Self-directed learning is considered an appropriate technique through which students can ready themselves in taking on a greater role in learning. Teachers should analyze the students before applying this technique to achieve the greatest effectiveness. Moreover, in the classroom where there are various types of learners, the teacher may use other instruction techniques appropriate to the students' ability, in order to help them learn happily and be able to enhance their learning achievements.

Recommendations for further research:

1. There should be studies addressing the application of other various styles of teaching techniques, in order to investigate any differences in the students' learning results.
2. There should be studies in terms of the comparison of potential results of various techniques.

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