

**DEVELOPMENT OF A WEB-BASED NON-FORMAL EDUCATION TRAINING MODEL BASED ON SELF-DIRECTED LEARNING AND RESOURCE-BASED LEARNING APPROACHES TO ENHANCE INFORMATION LITERACY AND SELF-DIRECTED LEARNING OF USERS' EDUCATION INFORMATION RESOURCES CENTER**

Piya Sakcharoen<sup>1</sup>

Achanya Ratanaubol<sup>2</sup>

**This research was financially sponsored by  
CU. GRADUATE SCHOOL THESIS GRANT**

**Abstract:** This research was aimed to develop a web-based training model for enhancing information literacy and self-directed learning of users' education information resources center (educational library). This research is based on the theories of self-directed learning (SDL) and resource-based learning (RBL) with integration into the new learning approaches for a training program in educational libraries.

Lifelong education and lifelong learning is a high priority issue in Thai society. The Thai Government supports the educational managers both in government and in the private sector, who have to cooperate with each other in lifelong education management. The government also promotes the importance of lifelong learning with self-directed learning, which is informal education whereby individuals can decide what to learn according to their interest and benefit for their profession. Achievement of lifelong learning needs the skills of the key to success for lifelong learning is information literacy skills and self-directed learning with self-regulation and supporting from directors of learning.

Information literacy is a required skill for the current era of a knowledge-based economy. It enables learners to do research, obtain benefits from the retrieved information, and became aware of ethics in information use. Information literacy relates to self-directed learning as they enhance each other. Individuals with information literacy can achieve the goal of self-directed learning better than those without it. However, the self-directed learning (SDL) alone is not enough to enable learners to achieve information literacy. This research suggests that resources-based learning (RBL) should be applied with self-directed

learning approaches, in order to enable learners to achieve skills of information literacy and self-directed learning, which will lead the learners to be successful in lifelong learning. Resource-based learning is a method of learning that enable learners to achieve information literacy. It is popular among library users since various kinds of resources are needed in the library to be applied in this method. Librarians and information specialists will instruct and support the learning method.

The Education Information Resources Center (EIRC), or, the library of The Faculty of Education, Chulalongkorn University, is the special library in education science. Users of the library are various professionals, such as students, teachers, lecturers, researchers, etc. Most of them are adult learners, who are different from young learners. Adult learners always concentrate on self-study, which is a required learning method at university level. They already know how to study themselves. However, information literacy is an important factor that helps them to be successful in self-study. Other libraries teach information literacy to users through library orientation or training by searching educational databases that is a non-formal learning process. This research focuses on the teaching of information literacy to the users of the Education Information Resources Center, based on self-directed learning (SDL) and resource-based learning (RBL) approaches. The learning is mostly conducted through the internet, as most of the users cannot attend the library orientation. The learning through a website can be adapted to the time schedule of users, and allow them to study on their own. Users need only basic skills on computers for this method.

This research presents the model of learning activities in non-formal education as a framework of the training. Most activities were conducted on websites, along with the learning process of self-directed and resource-based learning.

**Keywords:** Web-based Non-formal Education Training Model, Self-directed Learning, Resource-based Learning

**Objectives**

1. To study state, problems and learning needs to enhance information literacy and self-directed learning for adult learners in The Education Information Resources Center.

---

<sup>1</sup> Ph.D. Candidate, Doctoral Program in Non-formal Education, Department of Educational Policy, Management, and Leadership, Faculty of Education, Chulalongkorn University, Thailand

<sup>2</sup> Professor, Department of Educational Policy, Management, and Leadership, Faculty of Education, Chulalongkorn University, Thailand

2. To develop a web-based non-formal education training model that enhances information literacy and self-directed learning based on the concept of self-directed and resource-based learning approaches.

3. To study outcomes of developing a web-based non-formal education training model in information literacy and self-directed learning and satisfaction toward the training.

4. To study the relevant factors and problems in developing and using a web-based non-formal education training model.

### Research Hypothesis

1. The attendants of web-based training will gain a higher level of information literacy and self-directed learning than they had before the training.

2. The attendants of web-based training will gain a higher level of information literacy and self-directed learning than the control group after the training.

3. Satisfaction level scored by the attendants of web-based training is “very good”.

### Variables of the Study

#### Independent variables

- Patterns of training. There were 2 patterns of training; web-based training and class-based training.

#### Dependent variables

- Level of information literacy before and after the training.
- Level of self-directed learning before and after the training.
- Level of attendants’ satisfaction after the web training.

### Literature Review

This study is based on self-directed learning and resource-based learning theories and approaches to enhance information literacy and self-directed learning of users of education information resources centers.

Web-based non-formal education training (WBT), according to Achanya Ratanabul (1997), is a non-formal training process. The researcher applied that process to web-based training for users of The Education Information Resources Center to study and develop their information literacy skills and self-directed learning.

Self-directed learning (SDL) is the learning process provided for users of The Educational Information Resource Center through the Internet website by cooperation of the learners and teachers. The learning process used learning contracts (LC) in form of electronic portfolio. After the learning process is completed, the learners’ level of self-directed

learning readiness will be higher. This readiness will be measured by the Self-Directed Learning Readiness Scale (SDLRS) in form of 5-scale rating behavior questionnaire, consisted of 58 questions. The questionnaire respondents will report their level of agreement to the questions. The questionnaire consists of negative and positive questions, which cover 8-sides of Self-Directed Learning Readiness’ Guglielmino (1977).

Resource-based learning (RBL) is the learning process to develop information literacy using various resources for the users of The Education Information Resources Center. A significant feature of resource-based learning is that learners are the center of learning. They are able to select, search and retrieve information and present the result of their research on their own. The teachers will only support, activate and suggest the suitable information sources to them.

Information literacy (IL) is the level of knowledge and understanding to use information to meet their needs properly. The level can be measured by information literacy standard, which is the questionnaire about information use, behavior and approachability. The learners shall understand and accept the ethics of information use, in order to develop their attitude to lifelong learning. The level of information literacy can be measured by information literacy comprehensive test, which is an achievement test of training content. The main point of information literacy learning in this research based on 5 standards of knowledge and skills in information literacy for higher education. The said standards are as the following detail (Association of Colleges and Research Libraries, 2000):

- **Standard 1:** Ability to diagnose their learning needs in information literacy.

Object of learning: learners can diagnose their learning needs of information literacy efficiently.

- **Standard 2:** Ability to search for information. Object of learning: learners can access the required information efficiently.

- **Standard 3:** Ability to access information. Object of learning: learners can assess information, sources and relate those selected information to their knowledge.

- **Standard 4:** Ability to apply information. Object of learning: learners can apply information to resolve a specific problem efficiently.

- **Standard 5:** Ability to cite the information as the references

Object of learning: learners aware of economics, law and social issues on using and accessing information, and use information legally and ethically.

### Research Methodology

In this study, the researcher used the quasi-experimental methodology along with quantitative techniques and content analysis, in the non-randomized control group pretest - posttest research design

**Subjects:** The subjects were adult learners aged 18 and older. They were users of The Education Information Resources Center, Faculty of Education, and Chulalongkorn University, who consented to take part in this training.

**Experimental process:** There were 4 phases of research, as summarized below:

Phase 1: To study the current state, problems and learning needs to enhance information literacy and self-directed learning in adult learners of The Education Information Resources Center. The outcome was the useful information to develop a non-formal web-based training model in Phase 2. In this Phase, the researcher followed the process of a non-formal training model, Stages 1, 2, and 3, as follows:

1. Stage 1: Study the existing problems.
2. Stage 2: Study principles, goals and policies of the organization.
3. Stage 3: Analyze standards of work or training participation.

Phase 2: To develop a web-based non-formal training model, based on self-directed learning and resource-based learning approaches, through websites that enhance information literacy and self-directed learning. The researcher used information from Phase 1 to design and develop the research. In this Phase, the researcher followed the process of non-formal education model, Stages 4, 5, 6, 7, 8, and 9, as follows:

1. Stage 4: Design and create an atmosphere of learning.
2. Stage 5: Plan the training by cooperation of both trainers and trainees.
3. Stage 6: Analyze individual needs and individuals with problems.
4. Stage 7: Set the goal of training.
5. Stage 8: Create a curriculum with content that develops knowledge, skills and attitude.
6. Stage 9: Design method of training, information resources, mass of experience, and education media.

Phase 3: To study outcomes of developing a web-based non-formal training on information literacy, self-directed learning, and satisfaction level. In this Phase, the researcher followed the process of a non-formal education model, Stage 10, with self-directed and resource-based learning approaches to enhance information literacy, Steps 1-6, as follows:

Stage 10: Conduct the training process.

In this Stage, 6 steps of self-directed and resource-based learning approaches to enhance information literacy of the learners are employed, as follows:

- Step 1: Design and create an atmosphere of learning.
- Step 2: Set the goal of training according to learners' needs, based on their knowledge and experience.
- Step 3: Set the goal of training, methods, education techniques, and learning sources, with use of learning contracts (LC) for both trainers and trainees.
- Step 4: Conduct the training process, as planned by cooperation of trainers and trainees.
- Step 5: Investigate if knowledge is received in the training.
- Step 6: Evaluate the outcome, learners' achievement and learning approaches, by both trainers and the trainees according to the learning contract (LC).

Phase 4: To study the relevant factors and problems in developing and using a web-based non-formal education-training model. The information from Phase 4 was used to improve the approaches of a web-based non-formal education-training model. In this Phase, the researcher followed the process of a non-formal education-training model Stage 11, as follows:

Stage 11: Evaluate the training, follow up, and provide the feedback to trainers and trainees.

### Methods of Data Analysis

The data were analyzed by using descriptive statistics to explain the general information of the sample and satisfaction level of the experimental group.

The data were analyzed to find out the difference of level of information literacy and level of self-directed learning before and after the training within the experimental group by using dependent t-test.

The data were analyzed to find out the difference of level of information literacy and level of self-directed learning before and after the training between two groups by using independent t-test.

### Research Findings

The results from Phase 1 – 2 are presented as follow:

**Phase 1:** It was found that in the anticipated state, users need online resources for self-regulation learning and accessing data from anywhere, anytime. Because of the present state they lacked online informative resources. They aimed to study the searching techniques by themselves from the library's

documentations and the internet. The trend of users' learning needs were that they required online orientation and online training courses to help them retrieve informative data and avoiding impractical resources. The most problems of the users were lacking the knowledge related on the types of resources suitable for their works.

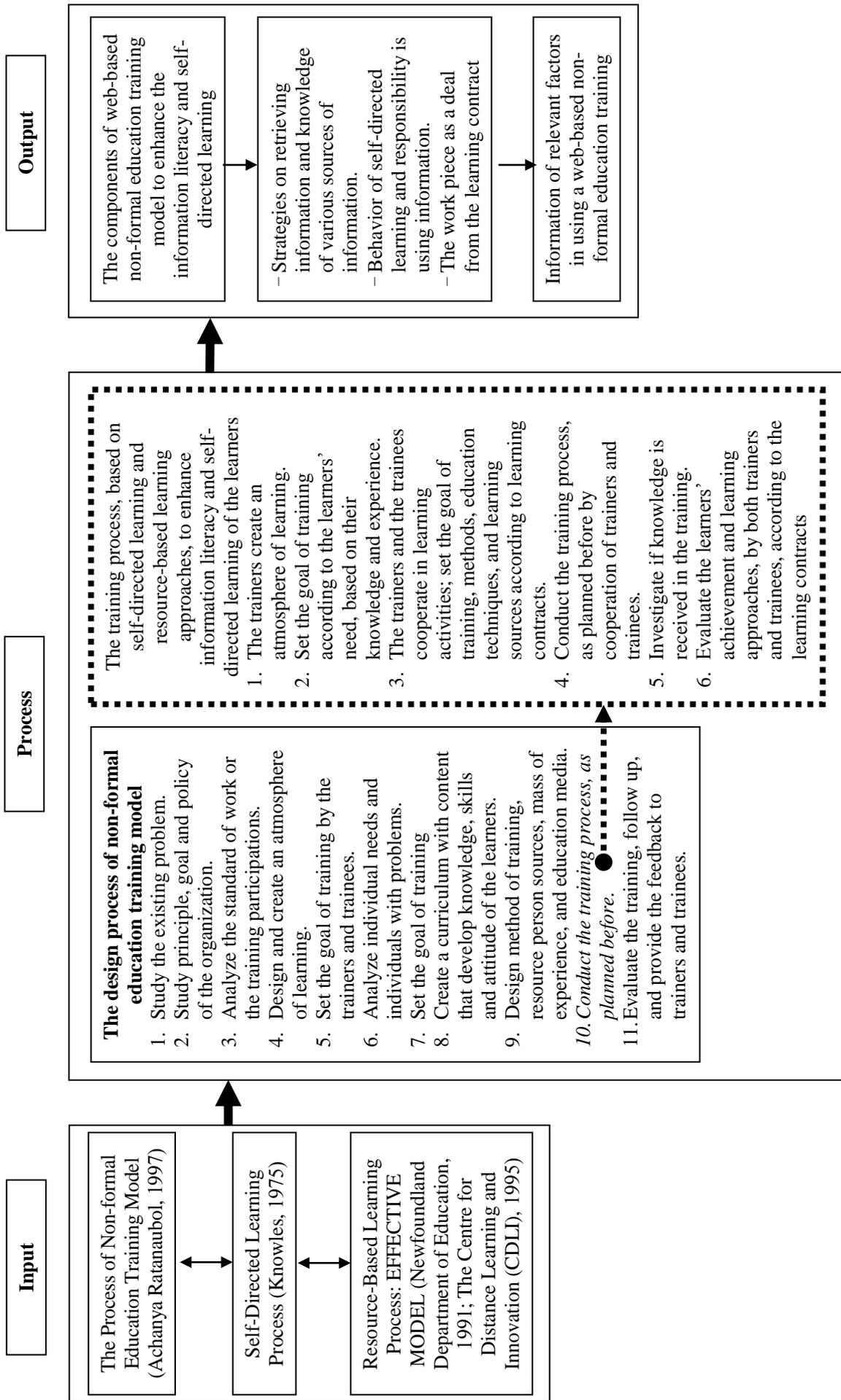
**Phase 2:** The researcher developed the training model from Phase 1 and obtained some concepts from the library staff who work on library orientation. Besides, the researcher gained web-based learning concepts for adapting to this project from e-learning connoisseurs. In Phase 1, the research synthesizes the components of the model that consisted of seven components as follows: objectives, learners, time, substance of learning, learning activities, learning media, and assessment.

**Phase 3:** The web-based training model enhanced knowledge and attitude of information literacy, self-directed learning behaviors of the experimental group which had means scores after the experiment higher than before the experiment at .05 level of significance.

**Phase 4:** The supported factors were the learners, the substance of learning, and the learning media factor. The problems were the learners, the learning activities, and Internet connection.

## References

- Achanya, Ratanaubol (1997). *The Process of Non-formal Education Training Model*. Bangkok: Department of Non-formal Education, Faculty of Education, Chulalongkorn University.
- Association of College & Research Libraries. (2000). *Information Literacy Competency Standards for Higher Education [Online]*. Available From: <http://www.ala.org/acrl/ilstandard10.html>.
- Centre for Distance Learning and Innovation (CDLI) (1995). *The Effective Model for Planning Resource-based Learning*. The Department of Education, Newfoundland and Labrador, Canada. Available From: <http://www.stemnet.nf.ca/~acrawfor/lrc2c.html> [Feb. 15, 2009].
- Guglielmino, Lucy Madsen. (1977). *Development of the Self-Directed Learning Readiness Scale*. Unpublished Ed. D. Dissertation, University of Georgia.
- Knowles, Malcolm. (1975). *Self-directed Learning: guide for learners and teacher*. Chicago: Forreth Publishing Company.
- Newfoundland Department of Education. (1991). *Learning to learn: Policies and guidelines for the implementation of resource-based learning in Newfoundland and Labrador schools*. St. John's, NF: Government of Newfoundland and Labrador.



**Figure 1: Research Conceptual Framework for the Development of a Web-based Non-formal Education-training Model, Based on Self-directed Learning and Resource-based Learning Approaches to Enhance Information Literacy and Self-directed Learning of Users of Education Information Resources Centers**