

The development of competency in ICT for small and medium sized enterprises in Nakhon Si Thammarat province.

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Abstract

The purpose of this research is 1) to study the components and ICT competency of the SME entrepreneurs in Nakhon Si Thammarat province. 2) Study of ICT competency for SMEs entrepreneur in Nakhon Si Thammarat Province. 3) Developed ICT competency for SMEs in Nakhon Si Thammarat Province. The samples were SMEs entrepreneurs in Nakhon Si Thammarat Province. Is the specific data of the juristic person group from the database of small and medium-sized enterprises of OSMEP. The sample group was selected by a purposive sampling method consisting of 25 people. The statistics used for data analysis are the consistency, training course efficiency, the mean and standard deviation. The research found that ICT Competency for SMEs entrepreneurship consists of three aspects: knowledge, skills and attitude. taken to analyze the competency gap between competency is real with the competency that should be of SMEs entrepreneurs in nakhon si thammarat province accommodation group. Shows that the competency that must be developed are 1) Multimedia communication via mobile phone 2) Use of application / office program. Used the above information to develop a Web-based Training. Which is training through the internet By using Adobe Captivate 8 as a development tool. So that entrepreneurs can learn by themselves. The researcher then developed the Web-based Training as a model for practice guidelines to review knowledge with the content and quizzes before-after study. The trial was used with SME entrepreneurs in Nakhon Si Thammarat province. The accommodation sector has tried to use the prototype of the information system to improve ICT competency. Which has the result of satisfaction evaluation with the developed information system prototype is High level ($\bar{c} = 3.85$, S.D. = 0.58)

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I. INTRODUCTION

Knowledge-based Society and Economy is an economic system that relies on the use of knowledge and information to help create an economy and value-added product. And the key to a knowledge-based economy is the creation of human capital by using education, learning, skills development, and effective knowledge management to help always modernize personnel and knowledge. So be able to create added value for products and services Therefore, knowledge development Learning and professional skills are very important. Because it is a

very important productive asset, every organization must pay attention and need a process to create added value based on the existing knowledge.[1] The development of information literacy is therefore a very important factor for the Knowledge based Economy because it is an important skill for self-learning that must occur at all times. Therefore, SMEs entrepreneurs are an important group for the national economy. Nakhon Si Thammarat Province is the 1 in 5 province that has the highest number of SMEs in the country. The development of ICT competency is essential to every business, but

businesses are essential to the implementation of information technology, the researchers selected as a sample is the accommodation business. In which information technology is used such as using computer programs, using the room reservation system, photography for public relations etc. The researcher therefore has the idea of studying and developing ICT competency for SMEs entrepreneurs in the accommodation business category in Nakhon Si Thammarat province. To develop the potential of SMEs and use the strengths of the cultural community way of life and wisdom. Promote lifelong learning to have the potential suitable for education in the 21st century and to continue to support the free trade market under the ASEAN Economic Community (AEC).

II.LITERATURE REVIEW

Gregor Jagodic and Valerij Dermol[2] has studied ICT tools for the development of entrepreneurial competencies. In some European countries, a considerable part of young graduates remains without real employment opportunities. A possible solution for this problem might be self-employment. Such a solution, on the other hand, requires the development of entrepreneurial competencies. ICT tools, which young generations are very familiar with, can significantly contribute to the development of such competencies, as well as to the planning of an entrepreneurial career. In our study, we aim to define those ICT tools that are most commonly used by counsellors and teachers to develop entrepreneurial competencies for young people and for those who intend to start their own business and in order for them to be successful. The study has been carried out in seven EU countries (Italy, Netherlands, Poland, Portugal, Slovenia, Spain and UK), as well as in Turkey. The study reveals that in different countries different ICT support tools for the development of entrepreneurial competencies have been used. Which ICT tools are used in a country depends on many factors. In our study, we stress out that the use of specific ICT tools might be encouraged by (1) the development of career counsellors' and teachers' competencies for using the ICT tools, (2) easiness of ICT tools use, and (3) their availability and spread in a specific geographic area. Besides, the study finds out that (4) ICT tools should upgrade previously used non-ICT tools focused on the entrepreneurial competency development.

Saifon Paophanao [3] The purposes of this research were to 1) study the experts' opinion to the competencies of using information technology and communication for studying of students 2) study the students' opinion to the competencies of using information technology and communication 3) present the desirable of students, Rajamangala

university of Technology Rattanakosin, Wangklaikangwon campus, to using information technology and communication for learning. The samples of this research were 21 specialists, 353 students, and approved the performance by 6 experts. The instrument used for gathering data was questionnaire. The data were statistically analyzed by using percentage, mean, and standard deviation (S.D). The results of the study were as the following 1) From the specialists' opinion showed that cognition in communication technology, using computer, applied program, internet connection, using of web browser program, conversation program, search engines, positive attitude, attempt to solve problem while using, the interest to the progress, the discipline and respect to the rule, responsible, realize to the value and benefit of using information technology and communication for developing skills which were the most important. 2) The students' opinion on 3 parts which were knowledge part, skill part and attitude part were in high level. 3) From Experts' opinion showed that the necessary competencies and suitable consisted of 1) 30 for knowledge part, 2) 34 for skill part and 3) 9 for attitude part. We can conclude the desirable competencies as the following.

Knowledge competency consisted of cognition in communication technology, knowledge in modern technology news, basic knowledge in using mobile phone (multimedia communication, signal connection of mobile phone to the internet, Bluetooth signal, using Wi-Fi for receiving and transferring data), basic knowledge in using computer (cognition in using computer, hardware equipment, data record, connection equipment, maintenance such as virus protection, package program such as official program, utility program, graphic program, internet program, multimedia program and statistical program), and basic knowledge in using internet (internet connection, web browser, electronics mail, conversation through network-social network, using instrument in searching information including method of searching, using utility program)

Skill competency consisted of using mobile phone skill (multimedia communication such as photography record, video record, picture file, audio file though telephone system. The signal connection on telephone to the internet, Bluetooth, Wi-Fi for receiving and transferring information, using computer skill (using computer correctly such as using Menu, Icon or other, using hardware equipment, equipment for recording data such as CD-Rom, using connection equipment such as printer, the maintenance of computer such as virus protection, using package program such as official program, utility program, graphic program, multimedia program, education learning media program and statistical program), using internet skill

(internet connection, web browser, electronics mail, conversation through network-social network, using instrument in searching information including method of searching, connection and changing data, using utility program, setting account for accessing internet, making block for store and distribute data), using information technology and communication skill for supporting critical thinking, synthetic thinking and solving problem (apply the learning activity to daily life, creative thinking for storage data, collect and present in interesting form and get the diagnostic skill in able to identify the reliable of data and between real data and virtualization data

Attitude competency consisted of the agreement, having positive attitude to technology, attempt to solve the problem while using technology, interest to technology progress, having discipline and respect the rule, responsible for using data, realize and use technology correctly and didn't break the morality, law, realize to the value and benefit in using for supporting learning activities, developing other skills such as thinking skill.

Aree Mayoungpong [4] has studied the model of competency development in ICT for Thai e-commerce personnel. The purposes of this study were to investigate the component of information and communication technology (ICT) competency for Thai e-commerce personnel and to present the model of competency development of ICT for Thai e-Commerce personnel. The data were collected using questionnaires, which aimed to collect the data from 385 electronic business personnel samples and the in-depth interview was applied to obtain qualitative data from 10 experts in the field of ICT from public and private sectors. The collected data were analyzed by using mean, standard deviation, and Exploratory Factor Analysis (EFA). The study revealed that the ICT competency for Thai for Thai e-commerce personnel comprised of 47 variables. The variables can be described the variance totally at 74.979 percent. Of all variables, there were 36 variables, which are highly considered necessary to identify the competency to design and develop websites and benefit the ability to develop and improve the website according to DBD Verified. Six variables refer to the competency concerning the interpersonal skill and responsibility among the personnel inside or outside the organization. Another five variables are most necessary is the ability to analyze issues carefully.

Sirirat Chamnanrob [5] has studied Information System for Enhancing the Computer Competencies of Undergraduate Students, Rajamangala University of Technology Phra Nakhon. The purposes of this study were to develop and validate the efficiency of an information system for enhancing the computer competencies required by the business enterprises and to evaluate the satisfactions of the developed information system. The findings found that the competencies required by the business enterprises were different form the competencies of students in the subject of database management. Then an information system and E-Learning lessons were developed according to the required different competencies and validated the efficiency by using the KW-CAI method in which the efficiency was 87.70% which validated at a "fair" level. There were nine units of E-Learning lessons which implemented via the information system to 35 students in the Faculty of Business Administration selected by a purposive of sampling method. The findings indicated that the computer competencies of students after learning with the developed information system along with E-Learning lessons were higher than the previous computer competencies at the significant level of .05. The students rated their satisfactions in the use of the developed information system and E-Learning lessons for enhancing computer competencies at a "much" level. The developed information system along with the E-Learning lessons could be used for enhancing the computer competencies to meet the required competencies of businesses enterprises.

From related research studies, It is seen that the researcher with a focus on Competency in several areas. The development of competency in ICT for small and medium sized enterprises in Nakhon Si Thammarat province. Is one way that entrepreneurs can learn by themselves. You can learn at any time, any place can be reviewed. Web-based Training Development for Self-Learning [6]. It is another way to develop competency in ICT for SMEs entrepreneurs, to promote lifelong learning and improve products and services by implementing information technology to work properly.

III. RESEARCH METHODOLOGY

A. Research Framework

The researcher review literature on the development of competency in ICT for small and Medium-sized enterprises in Nakhon Si Thammarat province. To analyze and synthesize to provide a research framework as shown in Figure 1.

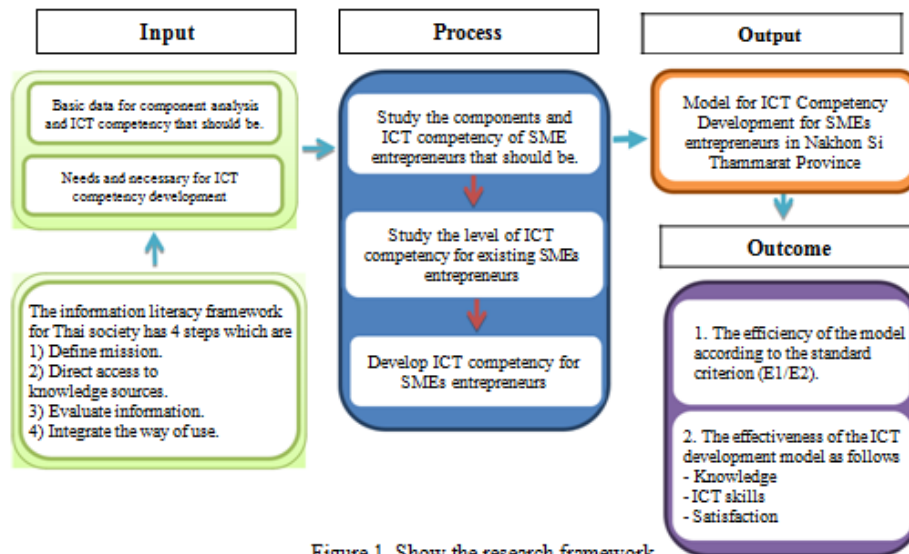


Figure 1. Show the research framework.

From figure 1, it shows the research framework that consist of 3 part; 1) Input part is basic data has been studied to analyze components and ICT competency that should be, needs and necessary for ICT competency development And information literacy framework for Thai society 2) Process part is as Study the components and ICT competency of SME entrepreneurs that should be, study the level of ICT competency for existing SMEs entrepreneurs and develop ICT competency for SMEs entrepreneurs and 3) Output part is as Model for ICT Competency Development for SMEs entrepreneurs in Nakhon Si Thammarat Province, the efficiency of the model according to the standard criterion (E1/E2) and the effectiveness of the ICT development model as follows: Knowledge, ICT skills and Satisfaction.

B. Process Research

Step 1: Study the theoretical principles and explore basic information about ICT competency studies intended for SMEs in Nakhon Si Thammarat. It is a collection of the list of skills in information and communication technology.

Step 2: Study the opinions of 5 experts about the ICT competency that should be for SMEs entrepreneurs in Nakhon Si Thammarat.

Step 3: Develop a questionnaire for SMEs entrepreneurs regarding their existing ICT competency.

Step 4: Analysis of the competency gap between the actual competency with the competency should be of SMEs entrepreneurs in Nakhon Si Thammarat Province.

Step 5: Develop the prototype of the information system for ICT competency development for SMEs entrepreneurs that is the Web-based Training via the internet by using Adobe Captivate 8 as a development tool.

C. Research tools

The tools in this research consisted of 1) Questionnaire of expert opinions regarding ICT competency that should be for SMEs entrepreneurs in Nakhon Si Thammarat. 2) Questionnaire by SMEs entrepreneurs regarding the existing ICT competency. 3) Web-based Training on ICT Competency for SMEs entrepreneurs in Nakhon Si Thammarat Province. 4) Evaluate the satisfaction of the training course developed.

IV. RESULTS

A Study of ICT competency that should be for SMEs entrepreneurs in Nakhon Si Thammarat Province. In which the list of information and communication technology skills is compiled by experts 5 persons with experience in teaching and learning using information technology as a tool for teaching and learning activities for at least 5 years by selecting purposive sampling. Which are related to 3 aspects of competency, knowledge competency of 27 items, skill competency of 29 items and attitude competency of 9 items. When studying the existing ICT competency of SMEs entrepreneurs in Nakhon Si Thammarat Province from the accommodation business. A sample of 25 samples were purposive sampling. The GAP analysis competency that should be between actual competency of SMEs entrepreneurs in Nakhon Si Thammarat province make known the capabilities that need to be developed is 1) Multimedia communication via mobile phone 2) Use application / Office Program. Which the Web-based Training via the internet by using Adobe Captivate 8 as a development tool. So that entrepreneurs can learn by themselves. The researcher developed the Web-based Training as a model for practice guidelines to review knowledge with content and pretest and posttest as shown in Figure 2.

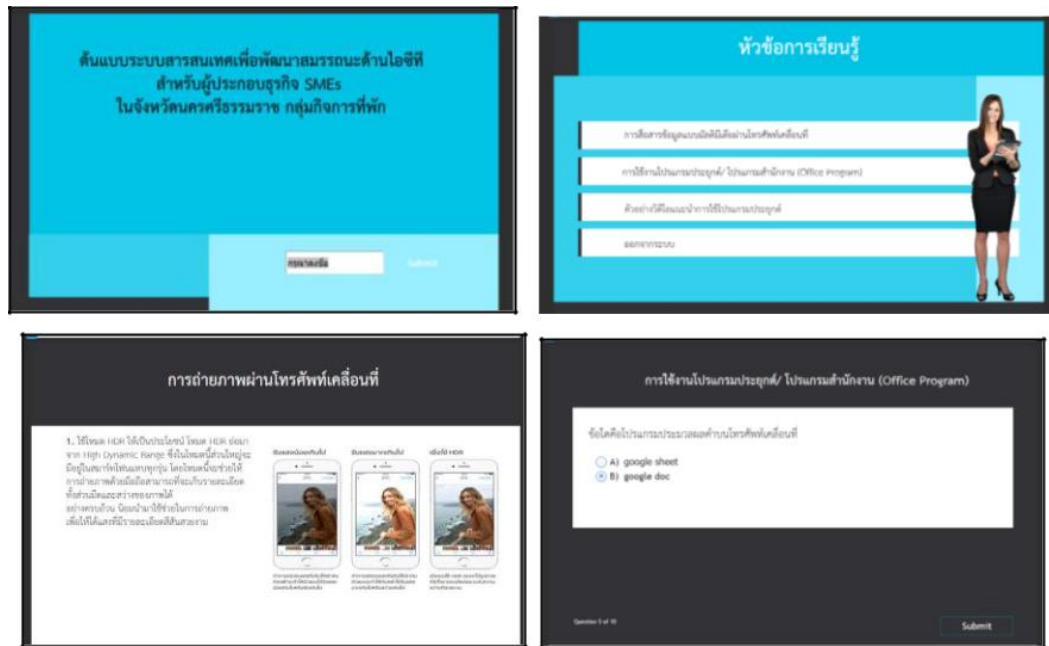


Figure 2 Shows Web-based Training screen.

And then bring it to SMEs entrepreneurs in Nakhon Si Thammarat Province of accommodation group have tried to use the prototype of the information system to improve ICT competency for SMEs. which has evaluated the satisfaction with the developed prototype by finding the mean value (\bar{x}) and standard deviation (S.D.) and then translate the results by comparing them with the 5 levels of average criteria.

Result of satisfaction assessment of SMEs entrepreneurs in Nakhon Si Thammarat province of accommodation group of 25 persons. That has a level of satisfaction with the use of ICT competency information system prototype as shown in the following table.

I. THE SATISFACTION OF ENTREPRENEURS WITH ICT COMPETENCY INFORMATION SYSTEM PROTOTYPE

| | Evaluation Items | \bar{x} () | S.D. | Satisfaction Levels |
|---------------------------------------|---------------------------------|------------------|------|---------------------|
| 1. | The content and process | 4.34 | 0.56 | high |
| 2. | The picture, language and sound | 3.50 | 0.78 | medium |
| 3. | The font and color | 4.24 | 0.59 | high |
| 4. | The test | 3.40 | 0.55 | medium |
| 5. | The lesson management | 3.20 | 0.45 | medium |
| 6. | Using the lessons | 4.42 | 0.58 | high |
| Summary of overall evaluation results | | 3.85 | 0.58 | high |

From table shows that the results of the satisfaction of entrepreneurs with ICT competency information system prototype. The overall average was high ($\bar{x} = 3.85$, S.D. = 0.58), when considering each side, it was found that the quality of using the lessons item average was high ($\bar{x} = 4.42$, S.D. =

0.58), and the lesson management item with an average minimum ($\bar{x} = 3.20$, S.D. = 0.45)

CONCLUSION

A study of ICT competency that should be for SMEs entrepreneurs in Nakhon Si Thammarat province of accommodation group. There are 3 types of competency analysis which are knowledge, skills and attitude. Which is consistent with other research is an essential of ICT competency for students, entrepreneurs, or other work groups. The ICT competency that should be provided by experts are different from the existing ICT competency of SMEs entrepreneurs in knowledge competency. To comply with the desired competency of the experts. Therefore, there is a prototype development to improve ICT competency for SMEs in Nakhon Si Thammarat of accommodation group, the result of the study showed that the SMEs entrepreneurs were satisfied at a high level.

For the recommendations of this research in the future, information systems should be developed to improve ICT competency should be developed a variety of other courses. And can be presented on a variety of media such as on a Tablet or Smart Phone and should be flexible or develop into a Mobile Application that can process quickly will make it more interesting to follow using information systems to improve vocational skills by oneself can be easier and more efficient.

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