THE LEARNING OUTCOMES OF THE ACTIVITIES TO COMMUNITY DIGITAL TECHNOLOGY TRANSFER TO THAILAND 4.0 FOR THE ELDERLY PEOPLE OF PATHUMTHANI PROVENCE

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Abstract: Thailand Development 4.0 Policy and Strategy brought the technology and innovation for living which affected to the elder due to the lack and inaccuracy of knowledge in using technology, then the integration project on research and academic services for community to promote using the technology and digital services would create a learning for 244 representatives of elder club in Pathumthani province. The project was aimed to assess the elder's knowledge and competency in using digital technology, and the readiness of value-added product and services included the effective distribution. The findings revealed that the elder were interested in this project especially whom with the knowledge of community product and services to learn the new technology and marketing for the real distribution. There were 2 phases of learning result; Phase 1: Creating the knowledge and understanding of Thailand 4.0 economic concept which emphasized on applying the technology for online product and services included assessment of 244 elders in using digital technology where indicated that the average of knowledge and understanding was 3.77 and standard deviation was 0.845, and Phase 2: In-depth training for creating the prototype and passing on the knowledge included creating the value-added community product and services of 38 elders through the online distribution where indicated that the average of knowledge and understanding was 3.82 and standard deviation was 0.865.

Keywords: Learning outcome, Technology transfer, Digital community, Thailand 4.0, Elderly people.

INTRODUCTION

Promoting and improving the competency of human capital were the strategies of The 12th National Economic and Social Development Plan which emphasized on the knowledge and skill development for lifelong learning where affected to the value, attitude and living behavior included the basic of human development on Thailand Development 4.0 Policy [1] by applying the technology for innovation development, emphasizing on the participation of public and private sections, promoting SMEs and Startup in the same direction, the quality of communication and telecommunication, and the quality of internet covered and linked all areas that affected to the elder directly and indirectly. Due to being the aging society of Thailand [2], it was a significance to promote the competency of entrepreneur and community enterprise on product development especially health product development by the local wisdom depended on unity and intention, sacrifice and readiness for learning the health product development, certification process of community product standard, the good relation of members and others, flexible structure and discipline, included the trust and participation in work process [3]. As the elder could apply their competency, knowledge and wisdom for the benefit of society, the government emphasized on budget allocation in the

strategic integration which was consistent with the national strategy, the integrated budget was a protocol to link the mission with operation of various sections for the efficient resource allocation, decreasing the issue and duplication, the continuity of integrated budget administration by Bureau of the Budget which improved the internal administration to the integrated budget administration where emphasized on the area by defining the discipline clearly.

The integrated budget administration was a tool of budget allocation for responding to the strategy by considering the integration of government policy, plan and strategy included the cabinet resolution, and prime minister or deputy prime minister who was assigned as the president of integrated budgeting in each topic [4]. The government founded the ICT Learning Center since 2007 and the enhancement policy of the Community Digital Center to be consistent with the Digital Development Plan for the economy and society of Thailand which was approved by the cabinet on April 5, 2016. The Digital Economy Rankings in 2010 revealed that Thailand was in no. 49 from 70 countries which indicated that there were few of digital developments in production, digital product commerce and using digital, the survey revealed that the digital economy of Thailand was not much improved comparing with the lead countries. In 2016, the community digital center was enhanced through the project of center administrator development and basic structure extension to support the need of community digital center [5] and to operate, link and be consistent efficiently, worthily and induplicately. For the purpose that, Phra Nakhon Rajabhat University was allocated the strategic integrated budget for 2018 on Digital Economy Development by integrating the learning, research, and art and culture for the academic services to create the good life quality for community, local and society. The activity of learning center and passing on the community digital technology towards Thailand 4.0, it was aimed to 1. Creating the morality and ethics of using technology for community for the long-term sustainability and stability of national economy, 2. Improving and producing the human resource for the knowledge and skill of applying the digital technology,   3. Increasing the distribution and value-added product from the community to market through the digital technology, 4. Creating the economic sustainability and stability in the digital era for community and nation through the learning center and passing on the community digital technology towards Thailand 4.0 [6]. The study of guideline for learning promotion, social network technology to promote the product of community enterprise, the practical operation from the learning assessment which it was in the highest level and indicated that the guideline was effective [7] included integration with Suan Sunandha Rajabhat Univerity for the highest efficiency and effectiveness on this mentioned policy.

OBJECTIVE

1. To study the basic of information technology of elder in Pathumthani province.

2. To study the activity of learning center and pass on the community digital technology towards Thailand 4.0 of elder in Pathumthani province.

METHODOLOGY

A study on Learning Result of Passing on Community Digital Technology by Thailand 4.0 Policy for Elder Club in Pathumthani Province was a participatory action research as the integration of research and academic services to pass on the knowledge to operate for problem solving by the participation of researchers, community and head of elder club on decision making, monitoring and benefits with the appropriate problem-learning process [8] by the Digital Economic Integration Plan for 2018 during October 2017 – July 2018.

A. Population and sample group

The population of this study was 625 members of elder club in Pathumthani province by using Taro Yamane formula with 0.05 level of significant and the sample group was 244 members by using the purposive sampling. The participants should have an occupation and the competency of using basic information technology.

B. Research methodology

Activity 1: Education of Knowledge, a friendly conversation started with presenting the information, important, objective and benefit from this study by the researcher to the representative of club members and the guideline of passing on the technology consisted of; 1) Providing information by studying the relevant literature and research design, 2) Providing community by clarifying the objective and defining the target group, 3) Providing people by clarifying the research process.

Activity 2: Knowledge Work Rally, passing on the knowledge and site study on the living of community and data analysis which there were 4 processes as following;

1. Plan, defining the process consisted of;

1.1) Surveying a basic information of elder,

1.2) Defining a sampling guideline by the competency of using information technology of elder,

1.3) Passing on the community digital technology for elder club by Thailand 4.0 Policy.

2. Action, operating the action plan divided into 2 phases;

Phase 1: Creating knowledge and understanding of Thailand 4.0 Concept by applying technology for online product and services commerce included assessment of using digital technology of 244 elders and 38 proficient elders were chosen and

Phase 2: Processing the in-depth operation to create a prototype and passing on the knowledge included creating the valueadded community product and services of elder through the online distribution.

3. Observation, observing the participation in the activities of Phase 1 – 2.

4. Reflection, analyzing the performance to assess the achievement.

Activity 3: Research Result, analyzing and processing the information systematically, concluding the report on basic of true information and discussing on academic principle for the diversity of concept and new knowledge.

The research method that was used in this study is a questionnaire which the researcher has created from the relevant concept, theory and research. It divided into 4 parts as following;

Part 1 - General information consisted of gender, age, degree of education and occupation.

Part 2 – Behavior of using technology of elder.

Part 3 – Result of learning community digital technology by Thailand 4.0 Policy for elder club in Pathumthani province which assessed by Likert Rating Scale with 5 levels;

    5 represented to 100% of behavior, very high level of knowledge

    4 represented to 75% of behavior, high level of knowledge

    3 represented to 50% of behavior, moderate level of knowledge

    2 represented to 25% of behavior, low level of
knowledge   1 represented to 0% of behavior,
very low level of knowledge and Part 4 – suggestions
which was the open-ended question.

Initially, the researcher brought the questionnaire for the content proof from 3 experts and revised for the completion. After that, tested the reliance with 30 elders who had the similar characteristics (excluded the sample group), and brought the data for the reliance analysis of the questionnaire by Cronbach's Alpha Coefficient formula, then it was 0.87.

The data was gathered from research as the secondary data for the concept, theory and the relevant research for the activity of learning center and passing on the community digital technology towards Thailand 4.0 of elder in Pathumthani province. The participatory action research and field research were the primary data study by the in-depth interview, focus group interview, participant observation, non-participant observation and questionnaire consisted of 2 phases; Phase 1: Creating knowledge and understanding of Thailand 4.0 Concept for 244 elders and Phase 2: Selecting 38 proficient elders for 3-month of data gathering, and checking for the completion before analyzing and processing.

The researcher checked for data completion, processed by the program for social sciences research using the descriptive statistics for data analysis as following;

1) Analyzed the general information by frequency and percentage

2) Analyzed the behavior of using technology of elder

3) Analyzed the result of learning community digital technology by mean, standard deviation which assessed by Best

Criteria;

    4.51 – 5.00 represented to very high level

    3.51 – 4.50 represented to high level

2.51 – 3.50 represented to moderate level

1.51 – 2.50 represented to low level

1.00 – 1.50 represented to very low level

RESULT

The findings of learning community digital technology by Thailand 4.0 policy for elder club in Pathumthani province, Phase 1: Creating knowledge and understanding of Thailand 4.0 Concept by applying technology for online product and services commerce included assessment of 244 elders;

Part 1: General information consisted of gender, age, degree of education and occupation which assessed by amount and percentage as shown in Table 1 as following;

Table 1: AMOUNT AND PERCENTAGE OF THE GENERAL INFORMATION IN PHASE 1

Topic	Amount	Percentage
Gender		
Male	85	34.84
Female	159	65.16
Total	**244**	**100.00**
Age		
51 – 60 years old	2	0.82
61 - 70 years old	172	70.49
71 - 80 years old	70	28.69
Total	**244**	**100.00**
Degree of education	218	89.34
	23 3	9.43 1.23
Undergraduate degree	0	0.00
Bachelor's degree		
Master's degree		
Doctoral degree		
Total	**244**	**100.00**
Topic	**Amount**	**Percentage**
Occupation		
Business owner	2	0.83
Housewife	25	10.24
Retired civil servant	17	6.97 4.51
Freelance	11 18	7.38
Trader	28	11.47
	88 3	36.06 1.23
	40	16.39

Entrepreneur	8	3.28
Community enterprise	4	1.64
Agriculturist		
Farmer		
Gardener		
Fisherman		
Total	**244**	**100.00**

From Table 1 revealed that there were 85 female (34.84%), 159 female (65.16%), most of them were 172 people at the age of 61-70 years old (70.49%), 70 people at the age of 71-80 years old (28.69%), 2 people at the age of 51-60 years old (0.82%), there were 218 people received the undergraduate degree (89.34%), 23 people received the bachelor's degree (9.43%), 3 people received the master's degree (1.23%), most of them were 88 community enterprises (36.06%), 40 farmers (16.39%), 28 entrepreneurs (11.47%), 25 housewives (10.24%), 18 traders (7.38%), 17 retired civil servants (6.97%), 11 freelancers (4.51%), 8 gardeners (3.28), 4 fishermen (1.64%), 3 agriculturists (1.23%) and 2 business owners (0.83%).

Part 2: Behavior of using technology of elder which assessed by amount and percentage as shown in Table 2 as following;

Table 2 : AMOUNT AND PERCENTAGE OF THE BEHAVIOR OF USING TECHNOLOGY OF ELDER IN PHASE 1

Topic	Amount	Percentage
Computer equipment and communication device		
Simple phone	28	11.47
Smart phone	159	65.16
Tablet	50	20.49
Notebook	7	2.88
Total	**244**	**100.00**
Information perception		
Television	20	8.20
Online	205	84.02
Publication	15	6.15
Radio	4	1.63
Total	**244**	**100.00**
Usage behavior		
Always	63	25.82
Often	85	34.84
Sometimes	68	27.87
Never	28	11.47
Total	**244**	**100.00**
Problem with using the internet		
Yes	38	15.57
No	206	84.43

Total	244	100.00

From Table 2 revealed that there were divided into 4 topics as following;

1. Computer equipment and communication device, 159 people used the smart phone (65.16%), 50 people used the tablet (20.49%), 28 people used the simple phone (11.47%), and 7 people used the notebook (2.88%).

2. Information perception, 205 people used the online (84.02%), 20 people used the television (8.20%), 15 people used the publication (6.15%), and 4 people used the radio (1.63%).

3. Usage behavior, 85 people often use it (34.84%), 68 people sometimes use it (27.87%), 63 people always use it (25.82%), and 28 people never use it (11.47%).

4. Problem with using the internet, 206 people didn't find any problems (84.43%), and 38 people find some problems (15.57%).

Part 3: Result of learning community digital technology which assessed by mean ($\bar{x}$), standard deviation (S.D.) and compared mean with the criteria as shown in Table 2 as following;

Table 3: MEAN ($\bar{x}$), STANDARD DEVIATION (S.D.) OF RESULT OF LEARNING COMMUNITY DIGITAL TECHNOLOGY IN PHASE 1

Topic	$\bar{x}$	S.D.	Level
Knowledge and understanding	3.77	0.845	High
Registration and giving services	4.12	0.731	High
General services	4.17	0.605	High
Total	**4.02**	**0.727**	**High**

From Table 3 revealed that the total of result of learning community digital technology in Phase 1 was in the high level ($\bar{x}$= 4.02, S.D. = 0.727); General services was in the high level ($\bar{x}$= 4.17, S.D. = 0.605), Registration and giving services was in the high level ($\bar{x}$= 4.12, S.D. = 0.731), and Knowledge and understanding was in the high level ($\bar{x}$= 3.77, S.D. = 0.845).

For Phase 2, 38 proficient elder were chosen and trained the in-depth participatory training for creating the prototype and passing on the knowledge included creating the value-added community product and services of 38 elders through the online distribution which assessed by mean ($\bar{x}$), standard deviation (S.D.) and compared mean with the criteria as shown in Table 4 as following;

Table 4: MEAN ($\bar{x}$), STANDARD DEVIATION (S.D.) OF RESULT OF LEARNING COMMUNITY DIGITAL TECHNOLOGY IN PHASE 2

Topic	$\bar{x}$	S.D.	Level
Knowledge and understanding	3.82	0.865	High
Registration and giving services	4.27	0.746	High
General services	4.35	0.687	High
Total	**4.15**	**0.766**	**High**

From Table 4 revealed that the total of result of learning community digital technology in Phase 2 was in the high level ($\bar{x}$= 4.35, S.D. = 0.766); General services was in the high level ($\bar{x}$= 4.35, S.D. = 0.687), Registration and giving services was in the high level ($\bar{x}$= 4.27, S.D. = 0.746), and Knowledge and understanding was in the high level ($\bar{x}$= 3.82, S.D. = 0.865).

Table 5: AMOUNT AND PERCENTAGE OF RESULT OF LEARNING COMMUNITY
DIGITAL TECHNOLOGY IN PHASE 2

Topic	Amount	Percentage
Increasing revenue through Line application	10	26.31
Increasing revenue through Online shop	8	21.05
Increasing revenue through Facebook application	10	26.31
Increasing revenue through Instagram application	6	15.79
Increasing revenue through VDO	4	10.54
Total	**38**	**100.00**

From Table 5 revealed that the total of result of learning community digital technology in Phase 2 was divided into 5 topics; 10 people increased revenue through Line application (26.31%), 10 people increased revenue through Facebook application (26.31%), 8 people increased revenue through Online shop (21.05%), 6 people increased revenue through Instagram application (15.79%), and 4 people increased revenue through VDO (10.54%).

CONCLUSION

The findings of Learning Result of Passing on Community Digital Technology by Thailand 4.0 Policy for Elder Club in

Pathumthani Province;

Part 1 - General information consisted of gender, age, degree of education and occupation which assessed by amount and percentage revealed that most of them were female, at the age of 61-70 years old, received the undergraduate degree, and occupied the community enterprise.

Part 2 – Behavior of using technology of elder which assessed by amount and percentage in Phase 1 revealed that most of them had a smart phone as the computer equipment and communication device, perceived the information through social online, used the internet oftenly, and never find any problems with using it.

Part 3 – Result of learning community digital technology which assessed by mean ($\bar{x}$) and standard deviation (S.D.) in Phase

1 revealed that the knowledge and understanding was in the high level ($\bar{x}$=3.77, S.D. = 0.845)

From the quality analysis of passing on technology process in Phase 2 revealed that the participants in the training were improved the knowledge and understanding in the high level ($\bar{x}$=3.82, S.D. = 0.865) which created the moral and ethical knowledge on using digital technology for the long-term economic sustainability and stability included improving and providing the elder on knowledge, competency, skill of applying the digital technology. In addition, most of them increased revenue through Line and Facebook application as the distribution increase and value-added product from the community to market through the up-to-date digital equipment and technology, and response to the customer's need.

DISCUSSION

The findings of Learning Result of Passing on Community Digital Technology by Thailand 4.0 Policy for Elder Club in Pathumthani Province by the participatory knowledge management revealed that the basic information of elder in Pathumthani province, the usage behavior in total was similar to the other generations as using the home internet or telephone network on smart phone or tablet for 1-2 hours a day for Facebook application, news update, searching, television, music and video etc. Nevertheless, it revealed that there were some different topics such as using the simple phone with the basic competency of information technology by computer or notebook than mobile phone, using the internet for 8-10 hours a day which was very interesting due to the data analysis on using the social online as a distribution for club or community product. This findings was consistent with the previous research; using the internet for 1-2

hours a day was consistent with Morrell, Mayhorn & Bennett [9], using the internet of adult for 1 hour a day and many times in a week, but differed from Boz & Aksoy [10], using the internet of adult for less than 1 hour a day and anytime needed without limitation.

The Learning Result of Passing on Community Digital Technology by Thailand 4.0 Policy for Elder Club in Pathumthani Province as considered on the consistency with concept, learning center and passing on the community digital technology towards Thailand 4.0 revealed that the consistency with adaptable sections where responded to the government policy, driven Thailand 4.0, and driven the digital economy. The digital center or ICT learning center would create the ICT network by adapting to respond to the government policy of digital economy which the community would drive for being Thailand 4.0. The digital economy was a policy of applying the information technology for economic and social activities, creating the economic competency which the government specified a promotion and foundation of digital economy seriously towards the global change and competition in production and trading of digital product, and to support the services of financial and other businesses especially communication and entertainment included to support the production of industrial product and development of creative economy. The human resource development was aimed to change a behavior in knowledge, attitude, skill, purpose and creative thinking or vision as passing on the technology for the value-added innovation and behavior which was consistent with the process of passing on the technology by Knowledge Management: Community of Practice (KM:CPP), model of Kan Intuwong [11], passing on the technology for the value-added innovation by Knowledge Management and Community of Practice.

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