

Development Model of Household Food Security Management การพัฒนาแบบการจัดการความมั่นคงทางอาหารในครัวเรือน

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บทคัดย่อ

การวิจัยนี้เป็นการวิจัยกึ่งทดลอง มีวัตถุประสงค์การวิจัย เพื่อศึกษาเปรียบเทียบคะแนนเฉลี่ยของความรู้เรื่องความมั่นคงทางอาหาร สิ่งแวดล้อมศึกษา แรงบันดาลใจในการอนุรักษ์สิ่งแวดล้อม และพฤติกรรมการบริโภคอาหาร และผลสัมฤทธิ์การอบรม ระหว่างก่อนและหลังอบรม และพัฒนาแม่บ้านต้นแบบให้สามารถเป็นวิทยากรที่จะนำความรู้ที่ได้รับจากการอบรมไปถ่ายทอดแก่แม่บ้านด้วยกัน เป็นการวิจัยกึ่งทดลองที่ใช้ การประชุมเชิงปฏิบัติการอย่างมีส่วนร่วมแบบพหุอีก ที่บูรณาการด้วยการวิจัยเชิงคุณภาพการอภิปรายกลุ่มย่อย การประเมิน 3 ด้าน เพื่อประเมินการมีส่วนร่วมและการประเมิน 4 ด้าน เพื่อประเมินการแสดงบทบาทสมมุติการเป็นวิทยากร เครื่องมือเป็นแบบสอบถาม ได้จากการสุ่มตัวอย่างกลุ่มตัวอย่างจาก แม่บ้าน 37 คน ในอำเภอนาเชือก จังหวัดมหาสารคามแบบเฉพาะเจาะจงตามเกณฑ์ที่กำหนดคือการมีจิตสาธารณะและให้คำมั่นว่าจะมีส่วนร่วมตลอดกระบวนการวิจัย สถิติที่ใช้ในการวิเคราะห์ข้อมูลคือ Paired Sample t-test เพื่อเปรียบเทียบความรู้ก่อนและหลังการอบรม และ One Way ANOVA เพื่อเปรียบเทียบผลการประเมิน 3 ด้านและผลการประเมิน 4 ด้าน

ผลการวิจัยพบว่า คะแนนเฉลี่ยของความรู้เรื่องความมั่นคงทางอาหาร สิ่งแวดล้อมศึกษา แรงบันดาลใจในการอนุรักษ์สิ่งแวดล้อม และพฤติกรรมการบริโภคอาหาร และผลสัมฤทธิ์การอบรม หลังการอบรม มีคะแนนเฉลี่ยสูงกว่าก่อนการอบรม อย่างมีนัยสำคัญทางสถิติที่ระดับ 0.01, 0.01, 0.01, 0.01, และ 0.01 ตามลำดับ รวมทั้งได้แม่บ้านเป็นวิทยากรต้นแบบที่สามารถถ่ายทอดความรู้เรื่องการจัดการความมั่นคงทางอาหารในครัวเรือน ระหว่างการอบรมมีการประเมิน 3 ด้านเพื่อประเมินการมีส่วนร่วมของผู้รับการฝึกอบรม พบว่า คะแนนเฉลี่ยการประเมินตนเอง การประเมินโดยเพื่อนและการประเมินโดยผู้อำนวยความสะดวกในสถานการณ์อดีตพบว่าแตกต่างกันมีนัยสำคัญทางสถิติที่ระดับ 0.01 ส่วน ในสถานการณ์ปัจจุบันและอนาคต แตกต่างอย่างไม่มีนัยสำคัญทางสถิติที่ระดับ 0.05 และ 0.05 นอกจากนี้การประเมินคุณลักษณะของการแสดงบทบาทสมมุติการเป็นวิทยากรด้วยการประเมิน 4 ด้าน พบว่า คะแนนเฉลี่ย การประเมินตนเอง การประเมินโดยเพื่อนวิทยากร การประเมินโดยผู้ฟัง และการประเมินโดยวิทยากรผู้เชี่ยวชาญ แตกต่างอย่างไม่มีนัยสำคัญทางสถิติที่ระดับ 0.05

คำสำคัญ: การพัฒนา รูปแบบ การจัดการ ความมั่นคงทางอาหาร ครัวเรือน

Abstract

The quasi-experimental research was employed for 37 housewives of Na Chuek District, Maha Sarakham Province. They were collected by purposive sampling technique based on criteria of public mind and commitment to participate via the whole research process. The objective was to compare the mean scores between pretest and posttest of food security knowledge, environmental education, inspiration of environmental conservation, consumption behavior and training achievement and to develop trainers for food security management knowledge for other housewives. Three Dimensional Evaluations (TDEs) were employed for exterminating the participation and Four Dimensional Evaluations (FDEs) were used

for trainer role play evaluation. One-way ANOVA was used to examine the mean scores difference of three and four groups.

After Participation-Appreciation-Influence-Control (PAIC) implemented, the results revealed that the mean scores of posttest of food security knowledge, environmental education, inspiration of environmental conservation, consumption behavior and training achievement were higher than pretest with statistical significance ($p < 0.01$ for all aspects). Moreover, it also obtained trainers who are able to transfer food security management knowledge for other housewives. In the past situation the results illustrated that mean scores were different with statistical significance ($p < 0.01$) but in present and future situations, results illustrated that mean scores were different with no statistical significance ($p > 0.05$ and $p > 0.05$). Additionally, the mean scores from Four Dimensional Evaluation were different with no statistical significance ($p > 0.05$).

Keywords : Model, Development, Household, Food security, Management

1. INTRODUCTION

The United Nations (UN) recognized the Right to food in the Declaration of Human Rights in 1948, and has since noted that it is vital for the enjoyment of all other rights. Household food security is all members, at all times, have access to enough food for an active, healthy life. The FAO identified the four pillars of food security as availability, access, utilization, and stability. Individuals who have food security and they do not live in hunger or fear of starvation. According to the United States Department of Agriculture, food security incorporates a measure of resilience to future disturbance or unavailability of critical food supply due to various risk factors including droughts, shipping disruptions, fuel shortages, economic instability, and wars. On the other hand, food insecurity, is a condition of limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways. During 2011-2013, an expected 842 million people were suffering from chronic hunger. The concept of food security has been undergoing an evolutionary change during the last 50 years. In the 1950s, food security was considered essentially in terms of production. It was assumed that adequate production would assure adequate availability of food in the market as well as in the household. In the 1970s, it became clear that availability alone

did not lead to food security, since those who lacked purchasing power were not able to have access to balanced diets. Purchasing power again is related to jobs or livelihood opportunities. Moreover, it is recently becoming evidence that even if availability and access are satisfactory, the biological absorption of food in the body is related to the consumption of clean drinking water as well as to environmental hygiene, primary health care and primary education. Additionally, there are micro and macro issues that cause food insecurity such as political instability, poor economic government, poverty, and lack of sustainable household income. Despite notable success in economic growth and poverty reduction in Asia, many Asia-Pacific countries have faced with problems of food insecurity. During 2003-2005, 541.9 million people in this region were malnourished even though many countries do have policies to ensure sufficient availability of basic food products, mainly staple food grains. Each country in the region has enhanced food accessibility with minimum food requirement at the household level [1]. However, over the last 50 years, the main global food issues have been famine, chronic hunger and protein-energy malnutrition (PEM). These problems interact with other problems as they retreat, expose new problems.

Thailand is an agricultural country and its development policy based on increases in

productivity and incomes is a key driver to achieve national and household food security, additionally export of surplus production for the global food security has also been paid attention too. The production of food in Thailand, particularly rice, has extremely enlarged far more than the domestic demand therefore the excess production is exported. Country food is excessive at the macro level but food accessibility at the household level remains a problem, particularly remote rural areas. Climate change and the expansion at the production of food-fuel crops is cause of food accessibility and availability. Moreover, the rise of global food price in current years has provoked a sharp increase in the domestic food price, causing a high inflation rate, particularly, for the poor, food component is considered as a significant part of expenses of household income. The high food price and inflation rate directly affect their livelihood position [2]. Food vulnerable households have not accessed to adequate food at all times even though Thailand has action plan to greatly reduced food poverty during 1988-2007. The numbers of people were affected by food scarcity that increased during 1998-2000 (in the wake of the financial crisis in 1997) and during 2004-2006 because of food price inflation) [3].

The principle of environmental education has basic concept that is pertinent to sustainable development that global people should have environmental knowledge, corrected values, positive attitudes, and skills to practice for protection and improvement in the environment, finally human must create new patterns of behavior [26]. Accordingly, Thiengkamol mentioned on public consciousness or public mind based on inspiration from insight and inspiration is different from motivation because inspiration needs no rewards, money and admirations. Inspiration of public consciousness or public mind, especially, for natural resources and environment conservation, one doesn't receive any reward, admiration or complement for ones act for natural resources and

environment conservation. Inspiration on public mind for natural resources and environmental conservation might occur due to appreciation in a person as role model or idle, events, situations, environment, media perceived such movies, book, magazine, and internet. [3] [4] [5].

In the Northeastern region of Thailand, most of the people prefer to eat unwell cooking beef and fish, the problems of food insecurity, it is because of lacking knowledge and understanding, awareness, positive attitude, public consciousness and responsibility for consumption behavior changing to practice in accordance with awareness of better nutritional composition. Moreover, over consumption without economization by following capitalism concept and materialism, they should turn back to traditional Thai food that contains various herbs and vegetables to meet healthier. Therefore, to develop people, especially, housewife to have food security knowledge, perform proper consumption pattern and prepare food based adequate nutritional elements to accomplish health state of family members by changing consumption behavior with minimization of ready-to-eat food such as potato chip, fried chicken, fried beef, and unwell cooking, it needs to cultivate them with environmental education principle integrated with inspiration of public mind through lifelong education process by training with Participatory-Appreciation-Influence-Control (PAIC). Particularly, housewife is the person who buys and prepares food for family, therefore if she has proper food security knowledge, she will able to buy and prepare food with high nutritional components. Moreover, she can use her knowledge of environmental education principle and PAIC process to provide various activities to raise their knowledge and understanding, awareness, positive attitude, public consciousness and responsibility for better food management [5].

2. OBJECTIVE

The objective was to compare the mean scores between pretest and posttest of food security knowledge, environmental education, inspiration of environmental conservation, and consumption behavior.

3. METHODOLOGY

The research design was implemented in steps by step as the followings:

3.1 The handbook of food security management was constructed for housewives, Na Chuek District, Maha Sarakham Province in the Northeastern region of Thailand. Its content contained food security knowledge, environmental education, inspiration of environmental conservation, and consumption behavior [6] [7] [8].

3.2 The research instruments comprised of questionnaire and evaluation forms. The questionnaire was used for determining participants about food security knowledge, environmental education, inspiration of environmental conservation, and consumption behavior.

3.3 The evaluation forms of Three Dimensions and Four Dimensions were constructed to evaluate the participant practice during PAIC implemented.

3.4 Participants of 37 housewives of Na Chuek District, Maha Sarakham Province. They would be recruited according to the setting criteria (willingness, time, devotion, commitment, and public mind).

3.5 Participant 37 participants who were housewives of Na Chuek District, Maha Sarakham Province were used to determine the training achievement of food security knowledge, environmental education, inspiration of environmental conservation, consumption behavior, and training achievement. The PAIC was used to train participant systematic operation. The focus group discussion integration with brain storming and Training of Trainer (TOT) were implemented [9] [10]. The Three Dimensional Evaluation (TDE) was used to determine the congruence of three aspects

evaluation regarding Self-evaluation, Friend-evaluation, and Facilitator-evaluation for training participation. The Four Dimensional Evaluation (FDE) was used for trainer role play evaluation [11].

4. RESULTS

The results of this study were as the followings.

4.1 General Characteristics of Sample Group

The sample group of this study was 37 housewives of Na Chuek District, Maha Sarakham Province in the Northeastern region of Thailand in the year of 2013. The sample group was housewives who were selected to be trained for trainers on food security knowledge, environmental education, inspiration of environmental conservation, and consumption behavior. Most of them paid respect to Buddhism with 37 (100.00%), had age between 34-62 years old with mean of 51.97 years old, had education level at primary school level with 23 (62.16%), had family characteristics with nuclear family of 24 (64.86%), and had income between 4,000-25,000 baht, mean with 10,486.49 baht.

4.2. Results of Pretest and Posttest with PAIC technique

PAIC technique was trained for 37 housewives about food security knowledge, environmental education, inspiration of environmental conservation, and consumption behavior. The research results revealed that before and after PAIC training process implemented, the mean scores of posttest of training achievement on food security knowledge, environmental education, inspiration of environmental conservation, consumption behavior, and training achievement were higher than pretest with statistical significance ($p < 0.01$, $p < 0.01$, $p < 0.01$, $p < 0.01$, and $p < 0.01$), as illustrated in table 1.

Table 1 Pretest and Posttest of Sample Group of Housewives

Training Issues	Posttest		Pretest		t	p
	\bar{X}	S.D.	\bar{X}	S.D.		
Food Security Knowledge	42.65	2.31	40.89	3.56	5.88	0.00**
Environmental Education	42.14	2.71	40.62	3.31	5.91	0.00**
Inspiration of Environmental Conservation	43.97	2.61	42.16	3.56	5.20	0.00**
Consumption Behavior	42.51	3.22	40.56	3.32	8.15	0.00**
Training Achievement	169.51	5.14	164.23	6.01	10.04	0.00**

** Significant Level at 0.01

In table 1, it showed that after training with PAIC, the posttest scores were higher than pretest with statistical significance at 0.01 level in all aspects

4.3 Results of Three Dimensional Evaluations for Participation in Past Situation

Three Dimensional Evaluation was employed for determining the participation of 37 housewives in three aspects evaluation in past situation, Self-evaluation, Friend-evaluation, and Facilitator-evaluation by using One-way ANOVA Analysis in order to investigate the mean score differences of three groups. The results of One-way ANOVA showed that there were different mean scores among Self- evaluation, Friend evaluation and Facilitator evaluation about participation in training process with statistical significance ($p < 0.01$) as showed in table 2.

Table 2 Three Dimension Evaluation of Sample Group for Participation in Past Situation

Source of Variation	Sum of squares	Df	Mean Square	F	Sig.
Between Groups	1.92	2	0.96	17.78	0.00**
Within Groups	5.82	108	0.05		
Total	7.74	110			

** Significant Level at 0.01

The Scheffe's method was used for analysis of each pair comparison of Three Dimensional Evaluation (TDE) to determine the mean score differences of their participation in the PAIC training process, it showed that Self-evaluation and Friend-evaluation, and Self-evaluation and Facilitator-evaluation had statistically significant at level of 0.01 and 0.01 but Friend-evaluation and Facilitator-evaluation had no statistically significant at level of 0.05.

4.4 Results of Three Dimensional Evaluations for Participation in Present Situation

Three Dimensional Evaluations were employed for determining the perceptions of 37 housewives in three aspects evaluation in present situation, Self-evaluation, Friend-evaluation, and Facilitator-evaluation by using One-way ANOVA Analysis in order to examine the mean score differences of three groups. The results of One-way ANOVA showed that there were different mean scores about participation in training process with no statistical significance ($p > 0.05$) as showed in table 3.

Source of Variation	Sum of squares	df	Mean Square	F	Sig.
Between Groups	1.10	2	0.05	0.81	0.45
Within Groups	6.66	108	0.06		
Total	7.76	110			

* Significant Level at 0.05

4.5 Results of Three Dimensional Evaluations for Participation in Future Situation

Three Dimensional Evaluations were employed for determining the perceptions of 37 housewives in three aspects evaluation in future situation, Self-evaluation, Friend-evaluation, and Facilitator-evaluation by using One-way ANOVA Analysis in order to investigate the mean score differences of three groups. The results of One-way ANOVA showed that there were different mean scores about participation in training process with no statistical significance ($p > 0.05$) as illustrated in table 4.

Table 4 Three Dimension Evaluation of Sample Group for Participation in Future Situation

Source of Variation	Sum of squares	df	Mean Square	F	Sig.
Between Groups	0.01	2	0.01	0.02	0.97
Within Groups	4.80	108	0.04		
Total	4.81	110			

* Significant Level at 0.05

4.6 Results of Four Dimensional Evaluations for Trainer Role Play

Four Dimensional Evaluations were employed for determination the trainer role play in four aspects were determining the trainer role play in four aspects. The results showed that there were different mean cores about trainer role play during PAIC with no statistical significance ($p>.05$) as showed in table 5.

Table 5 Results of Four Dimensional Evaluations for Trainer Role Play

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.13	3	0.04	1.41	0.24
Within Groups	5.45	180	0.03		
Total	5.58	183			

* Significant Level at 0.05

In the period of the PAIC training implementation, focus group discussion and brain storming were integrated, thus, it is perceptibly that in focus group discussion, housewife participants paid attention and had a very good participation to exchange their ideas widely and explained clearly to their friends in the small group. Moreover, they were able to play role as trainers successfully. In small group discussion they happily participated and were able to share their own imagination to draw their own idea and express their thinking to propose a project to implement after PAIC training finished. Moreover, they planned to share their knowledge and understanding getting from PAIC process to other housewives in the same district and the same province to act as trainers for other

housewives in the same district and the same province with public mind on food security management for their household by having proper consumption behavior to conserve the environment and natural resources for accomplishing better quality of life and reaching sustainable development.

5. DISCUSSIONS

The results demonstrated that the housewife participants had food security knowledge, environmental education, inspiration of environmental conservation, and consumption behavior after participating in the PAIC training process. These were harmonious to diverse studies of Thiengkamol [4] [5].

It might be explicated that the high school students of Chiang Yuen School after accomplishing with PAIC training technique are capable to raise food security knowledge, environmental education, inspiration of environmental conservation, and consumption behavior after participating in the PAIC training via real practicing behavior in their daily life activities in their district on food security knowledge, environmental education, inspiration of environmental conservation, and consumption behavior. The findings are also harmonious to the results of different studies of Thiengkamol, and Thiengkamol colleagues [4] [5]. that the participation is affected to practice for environmental conservation with public mind to achieve the actual sustainable development through environmental education process regarding food security knowledge, environmental education, inspiration of environmental conservation, and consumption behavior after participating.

The results of TDE of 37 participants were employed for determination of the congruence of three aspects evaluation, Self-evaluation, Friend-evaluation, and Facilitator-evaluation. The mean scores three aspects were difference among three aspects in past situations ($p<0.01$). This might be

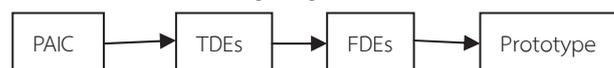
explicated that housewife participants live in rural area, therefore, they realize to the importance of consumption behavior correctly. However the evaluation must be done, present and future situations, self-evaluation, friend-evaluation and facilitators had similar mean scores. In addition, FDE was used to evaluate the trainer role play of housewife participants; it was revealed that the mean scores of Trainer-self evaluation, Trainer-friend evaluation, Audience evaluation, and Expert trainer evaluation were no statistically significant at level of 0.05. The mean scores of Trainer-self evaluation, Trainer-friend evaluation, Audience evaluation and expert trainer evaluation are similarity. However, the result of training was pertinent to numerous studies of Thiengkamol, [4] [5].

It was discovered that PAIC training is successful for training with integration of brainstorming process into focus group discussion, finally participants are able to develop a shared vision, action plan and projects in different issues of training whether urban community food security management, environment and natural resource conservation, elderly health care, dust self-prevention, and environmental conservation of food stand entrepreneur including other issues for instance environmental conservation of agriculturist, biodiversity conservation, environmental conservation of disability student, environmental education tourism and holistic tourism management [4] [5].

Moreover, the results of training achievement was congruent to a variety of studies of Thiengkamol and her colleagues, [4] [5]. It can be applied to use in other contexts with different target groups by replicating its implementation to build the biodiversity conservation model through trainer development for environmental knowledge transferring for schools and communities in other provinces in this region.

6. CONCLUSION

PAIC technique can be used to increase food security knowledge, environmental education, inspiration of environmental conservation, consumption behavior and to develop trainer for food security knowledge transferring to other housewives as following diagram.



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