



Toward a new paradigm on food literacy and learning development in the Thai context

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Abstract

The objectives of this research were to explore (1) the new paradigm on food literacy in the Thai context and (2) approaches to developing learning of the new paradigm on food literacy in the Thai context. Data were collected by (1) analyzing food literacy-related documents published from 2000 to 2016, (2) making a synthesis of the documents and having twelve volunteer experts criticize the researchers' synthesis, and (3) interviewing eight experts. Content analysis was implemented for analyzing data. The results revealed that the recent mainstream paradigm on food in the Thai context was reductionist, separating production and consumption systems, adopting science and technology in food production to achieve economic prosperity, and healthy food consumption. The new paradigm on food literacy in the Thai context was holistic and systemic, linking health, society, the environment, ecosystems, agriculture, spirituality and religion, and a fair economy. The new paradigm led to food security, sustainable food consumption, and sustainable development. Moreover, development of the new paradigm on food literacy for populations might help them change their paradigm in the belief that food consumption can change society. The food literacy learning strategies should employ varieties of learning methods, integration, and linkage with real life. The recommendations are that bodies of knowledge of social practitioners be gathered and networks for expanding social practices be organized. In addition, the diversity of target groups and contexts should be considered seriously. The guidelines for development and practice should also be provided so that interested persons can develop food literacy.

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Introduction

Global crises that occur today, regarding such things as diseases, the environment, ecosystems, and food production and consumption, are in part provoked by economic and social development both at the national and international levels. Therefore, the prosperity of a nation is measured in terms of its

technological advancement, industry, economy, production, consumption, and income distribution. Nonetheless, the changing global conditions and trends, in particular, globalization, and advanced communication and transport technology, have brought nations closer in a seamless world. As a result, consumers in the market share similar behavior and consume similar products (Office of National Food Strategy Development, 2002).

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Boosted consumption has led to consumerism and materialism which in turn affect changing food production and consumption and cause food crises (Nestle, 2007; Loy, 2008) and are related to such dimensions as health, agriculture, society, the environment, and ecosystems. Numerous attempts have been made to tackle food crises previously, but now the crises are more involved and very complicated. Therefore, food crisis problem-solving has to be conducted through transforming the ways of thinking and the paradigm that are important foundations of human behavior and the way of life. The world has changed, so there is a way to solve the crises without dealing with them as an array of separate problems.

At present, many incidents reflect our mainstream way of thinking, or paradigm, concerning food. These include the use of chemicals in intensive agriculture to raise productivity without concern for the farmer's health and the environment; and deliberate expansion of food cultures by advertising. Previously, various approaches to solving the problems have been tried, but our rapidly changing and complex society makes the problem complicated. It is time to adjust the mainstream paradigms on food to the new paradigm on food literacy in order to fully understand food in its various aspects and help solve food crises (The Giessen Declaration, 2005).

The term "food literacy" is an integrated paradigm. Health and environmental problems that result from food consumption still persist. Academics recommend expanding nutritional studies to encompass other aspects related to food along the food chain, such as production systems, the environment, ecosystems, and society. Indeed, a problem should be looked at holistically, from all perspectives, to solve it inclusively and be responsive to changes. Each step of the food process is relevant to others, reflecting interconnectedness and integration among all paradigms (The Giessen Declaration, 2005).

Since the concept of food literacy was introduced over a decade ago, there have been movements in several countries around the world such as Australia, Canada, United States, Germany, Denmark, Japan, Italy, and United Kingdom advocating food literacy in various groups through programs/activities or learning-by-doing projects, such as school gardens (Nowak, Kolouch, Schneyer, & Roberts, 2012; The Edible Schoolyard Project, 2014). Food literacy empowers us to make informed food choices. Food consumption does not involve only health, but also understanding food production systems involved in it, and the knowledge that good food production promotes preservation of the earth, human-to-human relationships, and social relationships. Food literacy also leads to recognition of the importance of food consumption that can fix food structural problems.

As previously stated, food problems have been encountered in the Thai context. The National Food Committee (2010) devised the Strategic Framework for Food Management in Thailand that has four strategic themes: food security, food quality and safety, food education, and food management. Food education is one of the four strategic themes related to food literacy. Therefore, mainstream paradigms on food should be transformed into new paradigms on food literacy. Many previous research studies (Benn, 2014; Nowak et al., 2012; Pendergast & Dewhurst, 2012; Vidgen, 2014) showed

that learning approaches for the development of food literacy is very important. In the present study, the researchers aimed to study the development of learning approaches for a new paradigm for food literacy that will enable Thai people to learn for paradigm shift. It might also provide approaches to educate groups involved, so that advantage may be taken of opportunities for improvement of food literacy. Therefore, the objectives of this research were to explore (1) the new paradigm for food literacy in the Thai context; (2) approaches to develop learning the new paradigm for food literacy in the Thai context.

Literature Review

The related literature reviewed for this study included the main ideas of paradigm and food literacy.

Paradigm

The term "paradigm" was first introduced by Thomas S. Kuhn in 1962 (Kuhn, 1970) and then Fritjof Capra expanded the scope of the definition introduced by Kuhn to include social paradigms in addition to scientific paradigms (Capra, 1996 cited Capra, 1986). This research employs Capra's definition of paradigm to analyze the framework of food and food literacy paradigms that include concepts, values, perceptions, and practices. In addition, various concepts and theories are analyzed such as the concepts of mainstream and alternative development paradigms, holism, the Web of Life, ecologism, materialistic values, consumerism, and theories of value, or axiology. The definitions of concept, value, perception, and practice are as follows:

A concept is an idea conceived in the mind, which is used to analyze social phenomena, or distinguish objects observed. Concepts are related to world view – how a person perceives, acknowledges, and interprets objects or relations of objects. Each person's world view is different, due to differences in culture and environment. Concept and world view are built upon the awareness, learning, and values a person acquires. At the same time, concepts shape a person's awareness, learning, and values.

Values reflect the beliefs or notions of a person, and shape how that person acts. The values and perceptions of a person influence his or her behavior. If that behavior is frequent and accepted, it becomes a practice.

Perception is a process of thought and mentality of humans that represents knowledge, understanding, and notions which result from stimuli and interpretation and impact behaviors and promote learning. Learning means acquiring old knowledge and experiences, which allows acquisition of new knowledge. Perception of truths, incidents, and situations shapes practices as well as values.

Practice refers to an activity that is carried out regularly until it becomes a new course or way. A practice is shaped by concepts and perceptions of truth or incidents that are the basis for awareness and learning, lead on to formation of further values and practices by individuals and communities.

Food Literacy

Food literacy originated from the concept of nutrition in the discipline of biology developed by Justus von Liebig at the University of Giessen, Germany, in the mid-19th century. In 2001, international conferences revisited the nutrition philosophy, when representatives of various academic institutions met. This led to the drafting of the Giessen Declaration in 2005, which suggests a modification of the definition of nutrition that demonstrates a different priority list from that of the 19th century (The Center for Ecoliteracy, n.d.). Furthermore, the scope of food literacy has to expand beyond general knowledge – that is, to embrace more than nutritional recommendations and cooking lessons and to establish linkages between food, people, health, and the environment – theoretically and practically.

The definition of food literacy according to Vidgen (2014) originated from research on “basics that empower individuals, households, communities, or nations to maintain food quality despite gradual changes and flexibility of food. Food literacy involves accumulating related knowledge, skills, and behaviors, in order to plan, manage, choose, prepare, and consume food that responds to the needs and provides sufficient nutrients to the body” and has four components, namely, (1) food planning and management (2) food selection (3) food preparation and (4) food eating.

A variety of studies related to food literacy have been undertaken with various groups of people in many countries. Some studies aimed to clarify the definition and components of food literacy while others emphasized creating knowledge and programs/activities concerning food literacy. The programs were organized for students at all levels of education, from kindergarten to higher education and included educating, learning-by-doing, such as school garden projects, and providing food-related courses that foster learning through curricular and extracurricular activities. Besides, food literacy organizations have been established by groups of people who are interested in food literacy in various countries (Benn, 2014; Cullen, Hatch, Martin, Higgins, & Sheppard, 2015; Nourish, 2009; Nowak et al., 2012; Pendergast & Dewhurst, 2012; Ronto, Ball, Pendergast, & Harris, 2016; Vidgen, 2014).

In summary, previous research on food literacy indicated that study groups and context were important aspects in developing food literacy. New paradigms for food literacy are less known in the Thai context. Hence, the investigation of the mainstream paradigm for food and learning approaches to develop food literacy that could help bring about change to a new paradigm on food literacy are crucial. The significance of food literacy is that it might change food consumption and food consumption could change society and enable society to cope with food crises better (Figure 1).

Methodology

The study of the new paradigm on food literacy in the Thai context was carried out using documentary study and adapting Capra’s definition of paradigm which includes concepts, values, perceptions, and practices as a framework for analysis. A document synthesizing ideas related to food literacy in the Thai context was drafted by the researchers. The document was submitted to a panel of twelve experts for criticism. The draft was then revised to become the result of this study.

Participants

Participants were purposively selected as experts from six areas. These experts have produced expert works in those areas and/or have worked in such areas not less than five years. The six areas were: (1) nutrition; (2) sustainable or organic agriculture; (3) sustainable food consumption; (4) consumption literacy; (5) paradigm; and (6) home economics education. Twenty-four experts were selected and invited to serve as key informants, but only twelve of them agreed to participate in this study, and eight of the twelve experts were willing to be interviewed. The research project was submitted, for approval, to the Office of the Committee for Research Ethics (Social Sciences), Faculty of Social Sciences and Humanities, Mahidol University. The approval was officially granted as the Certificate of Approval Number 2016/402.0111.



Figure 1 Conceptual framework

Data Collection

The research tools used were (1) guidelines for document study in terms of mainstream paradigm food, new paradigm on food literacy in Thailand and other countries, and new paradigm on food literacy learning, (2) a food literacy expert form which was composed of six parts: (2.1) new concepts concerning food literacy in the Thai context; (2.2) new values related to food literacy in the Thai context; (2.3) new perceptions of food literacy in the Thai context; (2.4) practices related to food literacy in the Thai context; (2.5) opinions concerning the definition and meaning of food literacy in the Thai context; (2.6) additional opinions concerning other issues related to the new paradigm for food literacy in the Thai context, and (3) a guideline for interview.

Data were collected by (1) searching the keywords “food literacy” and “food education” in eight e-databases that were licensed to Mahidol University during 2000-2016. The eight e-databases were Academic Search Complete (EBSCOhost), ProQuest Dissertations & Theses Global, Nursing & Allied Health Database (ProQuest), Education Research Complete (EBSCOhost), ScienceDirect (e-journals), SCOPUS, SpringerLink (e-journals), Google Scholar, and Informa HealthCare Journals (Taylor & Francis Online). Finally 53 papers were selected for analysis; (2) searching for movements of food literacy related dimensions in the Thai context in books, websites of various organizations, and printed materials of food literacy related groups, a total of 20 papers being selected for analysis; (3) analyzing the documents related to food literacy and then creating a synthesis of significant points concerning food literacy; (4) submitting the researchers’ synthesis for criticism by the twelve experts who were willing to participate in this study; and (5) interviewing eight volunteer experts.

Data Analysis

Data analysis included (1) documentary investigation method using content analysis technique, and (2) content analysis and interpretation of qualitative data from interviews. Data source triangulation, i.e., analysis of documents, criticism by twelve experts, and interviews with eight of the experts, and triangulation of methods were used to verify trustworthiness, analyzing document. In addition, inter-rating of the 12 experts was performed to establish reliability of this study.

Results and Discussion

The New Paradigm on Food Literacy in the Thai Context

The mainstream concepts on food in Thailand and other countries found in this study were reductionist and linear, that is, consumption of food was viewed as a means of obtaining separate nutrients from food and their effects on health were considered, but other dimensions related to food such as agriculture, the environment and society were disregarded. This viewpoint leads to reductionism in learning, adopting science and technology in food production to build a prosperous economy; increasing the quantity of food

production in order to increase income for economic prosperity; and focusing on consuming food in order to get nutrients; and healthy food consumption.

Food values under the mainstream paradigm, are concerned with innovation in the development of food production in order to serve people’s needs; transferring food values through advertising or food-related knowledgeable persons with the aim to encourage consumption; beliefs in the knowledge that is confirmed by scientific methods.

The concepts and values affect perceptions of the factors creating challenges of the mainstream paradigm such as the increase in the numbers of people suffering from non-communicable chronic diseases and over consumption, learning processes and methods are reductionist because of the world’s and society’s reductionist viewpoints.

The concepts, values, and perceptions affect the mainstream practices on food such as (1) learning processes and methods. Reductionism is used as a lens to view the world which explains learning as reductionistic approach. Learning comes from experts and learning about food and health from a school subject; (2) transferring knowledge from those who possess knowledge about food - - experts, nutritionists, and scientists. Food knowledge is transferred through experts and modern media. Besides, the beliefs that the sources of knowledge are teachers, academicians, therefore, teachers who are knowledgeable transfer knowledge to students; and (3) practices for getting benefits from knowledge. The benefits from food are nutrients, which affect people’s health.

The new paradigm on food literacy in the Thai context views food holistically, linking many dimensions such as social, environmental, ecological, spiritual, religious, and economic for the ecological sustainability and food well-being. The important points about food that must be learned are nutrition; eating food as medicine, and the science and art of balanced diets.

In the new paradigm, food is valued because human beings are one part of nature. They consume natural, seasonal, and local food and eat food as medicine. They know the sources of food in order to promote a sustainable food chain and transfer values about food through the family, relatives, the media, the community of practitioners, and pass on values concerning cultural, traditional and Thai wisdom aspects of foods through knowledgeable persons in the community.

Trends of new concepts on food literacy in the Thai context are holism and connection with various dimensions. Values related to food are transferred through many channels especially the family, which is closest to the individual. Currently Thai social activists are inspired by new concepts and values concerning food and try to propagate the new concepts on food through projects and activities such as Food for Change Project (2017), the BIOTHAI Foundation (2016), the Sustainable Agriculture (Thailand) Foundation (2017), and the Sampran Model (Sampran Model Center for Organic Farming, 2017). Thus, significant learning sources of new paradigm on food literacy in the Thai context are being created and might develop, as in other countries, when people gather to learn about food, health, and sustainability through communities of practice.

Concepts and values affect perceptions of the factors creating challenges of the new paradigm with regard to production and consumption. The impact of food production includes climate change, decrease in the biological diversity of plant and animal species, and an increase in unsafe food situations. Food consumption includes eating out for some groups of people and can be costly and unsafe. The consumption of processed foods is increasing, and there are an increasing number of non-communicable chronic diseases caused by food consumption. Therefore, perceptions of such situations are leading to getting back to consumption of food produced or cooked by households/local food, consumers' trends among consumers to eat wisely, promoting the comprehensive organic agriculture, linkages between producers and consumers, and learning about food production processes including food chains.

Among perceptions about the factors affecting the changes toward new paradigm, the factor that is of the most significance is “unsafe food” for both consumer and producer.

“...eating out is costly and unsafe...”

(expert 1, personal interview, April 25, 2017)

“...preparing food for oneself is cheaper and safer...”

(expert 2, personal interview, April 10, 2017)

The concepts, values, and perceptions affecting the new practices related to food literacy are: various learning methods such as participatory learning, integration and linkage with real life and experiences, practicing food linking with other dimensions, food socialization in a life-long process affecting the way of practices of people and community, learning through ecological food dimension, and learning in households and community. In addition, food literacy is transferred through practice in daily life, wisdom, tradition, academic,

and social action. Some practices for utilization of knowledge are giving help in solving life problems including people's health problems, giving help to solving food problems related to producers, and environment, enabling people to become a medium for changing themselves and society in order to sustain the ecosystem, and utilizing knowledge for the development of a fair food economy (Table 1).

Learning of New Paradigm on Food Literacy in the Thai Context

An important basis of learning is a definition that corresponds to understanding one another so that common understanding can be reached in determining learning goals and outcomes. In addition, implementation should choose such learning methods/concepts as transformative learning (TL), problem-based learning, constructivism, 21st century skills and learning process using knowledgeable persons and learning sources that lead to achieve learning goals (Figure 2). The results from research objective 2, are shown in Figure 2 and expanding learning outcome of food literacy is shown in Figure 3.

The definition of the term “food literacy” contained the dimensions related to health, environment, society, social equity, agriculture, economics, and culture, as linked to the issues of food which are added to nutrition. Similarly, Fullan (2014) explained the meaning of food literacy more clearly by adding the concept of individual level related to food, emphasizing changing of food consumption patterns by buying better quality products for oneself and cooking at home.

Table 1 The mainstream paradigm on food and the new paradigm on food literacy in the Thai context

The mainstream paradigm on food	The new paradigm on food literacy
1. Concepts	1. Concepts
Food was viewed as reductionist and linear	Food was viewed holistically and systematically, linked to society, the environment, ecosystems, spirituality and religion, and a just economy
Boosting production and consumption	
Healthy food consumption	Eating food as medicine and for ecological sustainability and food well-being
2. Values	2. Values
	Consuming natural, seasonal, and local food
The development of innovative food production in order to serve people's needs	Knowing the sources of food in order to promote sustainable food chains
Transmission of values related to food through advertising or food-related powerful persons with the aim to encourage consumption	Transmitting values related to food through the family, relatives, the media, communities of practitioners
3. Perceptions	3. Perceptions
Many people are afflicted with non-communicable chronic diseases	Many people are afflicted with non-communicable chronic diseases
Over consumption	Unsafe food has increased
The food industry emphasized modern food production without paying attention to the environment	Social action to protect biological diversity of natural food resources
4. Practices	4. Practices
Learning process and methods are reductionist	Learning processes and methods are integrated and participatory
Transmission through experts, nutritionists, scientists, teachers, and academics	Transmitted through practice in daily life, wisdom, tradition, academic, and social action

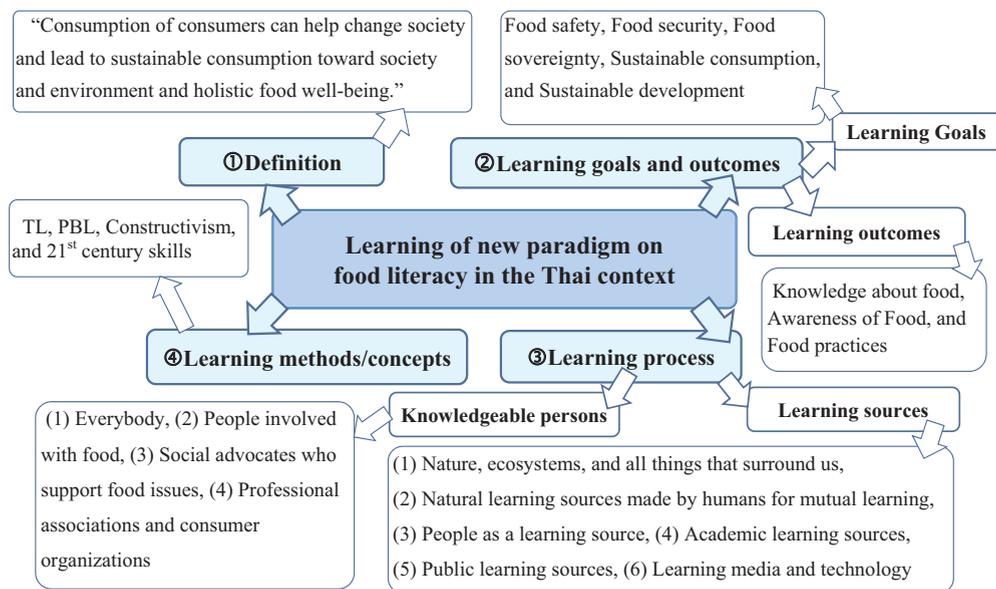


Figure 2 Learning of new paradigm on food literacy in the Thai context

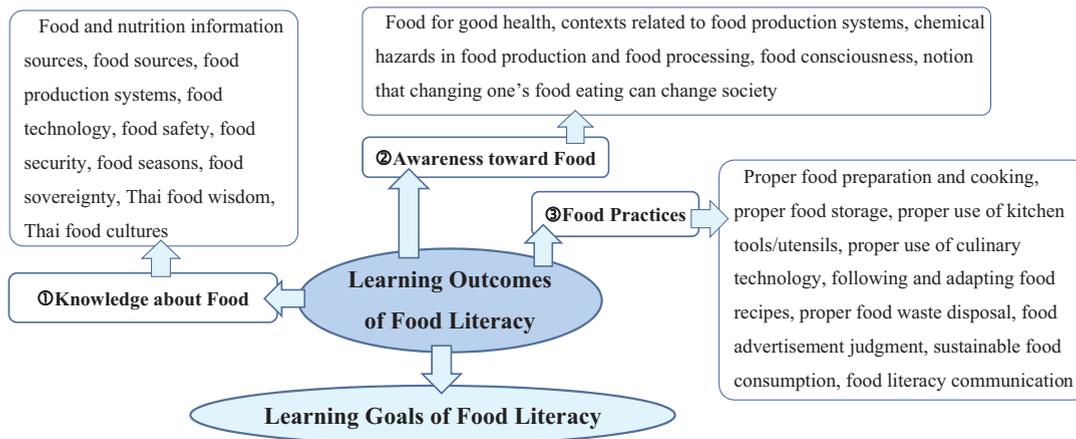


Figure 3 Summary of learning goals and learning outcomes of food literacy of the new paradigm in the Thai context

The definition should be consistent with goals and context. Food literacy in other contexts may be defined differently. For example, food literacy for urban society mainly depends on the production part while for rural society, the strong points are culture capital, various forms of wisdom, and self-reliance. The key in such studies is overall understanding of the new paradigm on food literacy so that they lead to the identical goal. Similarly, Vidgen (2014) studied definition and component of food literacy to employ in devising strategies and plan. In addition, Pendergast and Dewhurst (2012) studied

about content of food literacy to employ in home economics that promoted food literacy in various groups.

Learning goals of new paradigm on food literacy in the Thai context include food safety, food security, food sovereignty, sustainable food consumption, and sustainable development. In order to achieve learning goals, one should follow learning outcomes of food literacy in three domains, which are knowledge, awareness, and practice and which are linked to the new paradigm on food literacy (Figure 3).

As for the learning outcomes of food literacy knowledge about food, the most popular issues that were mentioned are food safety and sources of food and nutrition. It can be said that these issues are closest to people and are the starting point of the awareness about the issue before expanding to other issues. Furthermore, most people think that food literacy is a new issue. In fact, food literacy is closely connected to everybody.

“...food consumption-related diseases are increasing while lack of knowledge about health is also increasing...”
(expert 3, personal interview, April 19, 2017)

Learning outcomes in regard to values and awareness are difficult to achieve. Naturally, human beings often think about themselves; thus, at the first level, the awareness about food consumption may concentrate on health. Later, the awareness levels may change to other related dimensions until up to awareness about changing ourselves would help to change society. As, in a phrase in the Strategic Framework for Food Management of Thailand (The National Food Committee, 2010, p. 64), it is indicated that the weakness is “consumers lack awareness and desirable behaviors in choosing and consuming food”. This issue is very interesting because choosing and consuming food reflected people’s food literacy but people’s behaviors are complicated. The undesirable behaviors do not mean that people lack knowledge about desirable behaviors. Therefore, knowledge, awareness and behaviors must move in the same direction.

“...food literacy is a concept already existing in the Thai society. When the situation, time, and context change, the thinking of food has to change. However, what food literacy should promote is the awareness and consciousness of what is changing...”

“...furtherance concerning food literacy is significant...”
(expert 4, personal interview, May 8, 2017).

Learning outcome in regard to practices should be considered as follows: food preparation and cooking from ingredients that can be easily assessed and are safe, keeping ingredients appropriately, using kitchen apparatus/utensils, and following and applying cooking manuals for innovation in daily life. This concept is congruent with Fullan (2014) who in discussing the meaning of food literacy explained that it reflected the recognition that the important skills in regard to cooking are people’s basic skills that are important both in normal and emergency situations. Self-reliance at the individual level is recognized as a good preparation aiming to help society move on when a food crisis occurs.

Recommendations

1. Target groups and contexts for food literacy development should be investigated in order to design appropriate learning strategies for both formal and informal education. Learning goals for corresponding understanding should be provided in a way that is practical and accessible. Of course, the goals developed by the teachers rely on the teachers’ perceptions of food literacy.

2. The responsible institutions should develop a curriculum guide on food literacy under the new paradigm in the Thai context. The curriculum should be used at two levels: (1) the

fundamental level, which is concerned with the three learning outcomes of learning food literacy in accordance with the results found in the research; and (2) the-way-of-thinking level, which is concerned with learning leads to the change of the paradigm, in other words, activities leading to development of learning on food literacy, where the emphasis is put on helping students think systematically. If this can be done, the teaching can be extended to other social dimensions.

3. Responsible institutions should develop food literacy learning in formal education through home economics education curricula. That is, home economics teachers should engage in self-improvement and become agents of change in food literacy in school.

4. Learning food literacy through social practices should be provided. Currently people learn through both formal education and informal education, the latter being life-long learning through social action and all kinds of media. Food-literacy related institutions should provide assistance to the public in gaining knowledge about food literacy. In addition, social action groups can expand networks from successful projects such as the Sampran Model, Pun Pun Thai, etc. to become stronger social movement.

5. The bodies of knowledge of these social action activities should be collected so that people who are interested have access to these channels for learning. Besides, social action networks should reflect food strategies so that institutions recognize the importance of the phenomena occurring in order to recommend policies and strategies to drive food literacy for the people at the policy level. Eventually people who are consumers can drive the expansion of this concept from the individual to the community level.

Conflict of Interest

There is no conflict of interest.

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