

CHAPTER 2

REVIEW OF RELATED LITERATURE

Review of related literature and researches in this chapter consists of the following:

- 2.1 Concepts and theories related to learning and technology adoption
- 2.2 Concepts about video and radio television
- 2.3 Graphic and pictorial illustration
- 2.4 Concepts of sufficiency economy Philosophy
- 2.5 Related research

2.1 Concepts and theories related to learning and technology adoption

Learning can be referred to as the development of new knowledge, skills, and attitudes of an individual towards the interaction with information and environment. Learning is a complex activity which can be explained differently based on view of each person. Thus, there is the occurrence of various learning theories. These results in the difference in a guideline for the provision of learning based on the theory used (Malithong, 2005).

Learning is the process making human be responsive to permanent change of behaviors and thinking. The nature of human learning derives from perception and the interpretation happens through the thinking process of the brain mechanism. This is due to practice and experience, not natural responsiveness. Besides, behaviors which have been changed are rather permanent (Coon and Dennis, 1994 as cited in Ngaosripai, 2006). Learning can occur due to the situation of the environmental condition of the society in various aspects, e.g. struggle for existence, adaptation, career, personality development, growth of the society, etc.

Hilgard and Bower (1970) as cited by Wonganuttrarote (2008, p.29) revealed that learning is a process making behavioral change as a result of training and experience. This is not because of the occurrence of natural response such as instincts, maturity, etc. or contemporary physical changing such as exhaustion, toxicity of drug, etc.

Learning on cognitive domain

Phuthametha (1980, p. 88) proposed the learning concept on cognitive domain that an individual needs to use the brain function for finding causes and effects. Thus, evaluation and imagination on cognitive domain learning is complicated and it needs much thinking and brain activities as follows:

1. Cognitive domain learning will occur when a learner concentrates in the environment to be learned. It can be said that if man live in the environment, which interest them in learning on cognitive domain, what to be learned must be the environment that they need to learn. Therefore, the teacher must stimulate the student wants to learn when he wants the student to learn something.

2. The learning outcome on cognitive domain of each individual is usually different. This is depending on the level and type of individual differences. They may be different in terms of potential type and others. Thus, it is impossible for the teacher to try to make the students learn equally.

3. Readiness in various aspects word recognition, reading ability, brain capability, and various experiences of learners have an effect on what to be learned. That is, the learner must memorize the words for conveying the meaning. That is, he/she must know the meaning of those words.

4. Effective cognitive domain learning must be done by evaluating units of each lesson appropriately.

5. For learning of a concept or principle, a learner must truly have knowledge and understanding about the concept or principle. Thus, teaching about the concept or principle focusing on memorizing is not effective teaching. It wastes time for both the teacher and the student.

6. For the learning method of problem solving, the teacher must assist the learner to know the determination and limitation of problem scope. This is aimed to find necessary information and testing. Also, the obtained information must be interpreted and analyzed. The learner must be reinforced to use his/her thought for finding ways to solve the problem.

7. For the brain process of a learner particularly on the method of a problem analysis and synthesis, it is more on cause and effect finding rather than an effect of the knowledge on facts and fact memorizing.

Bloom (1956) as cited by Suebphanwong (2001, p. 17) revealed that the behavior on cognitive domain is the behavior concerning about intellectual capability and skills of an individual as a result of learning experience obtained. It was found that the structure of learning development on cognitive domain is from simple to complex or from concrete to abstract. This can be classified into 6 levels as follows:

1. Knowledge it can be defined as the capability of the brain in memorizing or recognizing various stories of the content to be learned or previous experiences. This can be expressed by writing or speaking. For example, one learner is taught that quality of the tool used for measuring is the most important thing (validity). Thus, if he/she writes or speaks that validity is the most important thing of the quality of the tool used for measuring; this implies that this learner has a learning behavior or knowledge.

2. Comprehension it can be defined as the capability of the brain in the explanation or transfer of knowledge in the new form but still maintains the same content. In other words, it is the combination of knowledge that rationally broadens previous or existing knowledge. Indeed, the capability of the brain initiated with the comprehension stage until the evaluation stage is considered as a high level of the capability of the human brain.

3. Application it can be defined as the application of knowledge and comprehension in a specific matter to solve various problems occurring in new situations. To cope with the problems, an individual must be able to remember various kinds of knowledge; particularly on the method and the combination of concepts and comprehension in the interpretation and extension of a particular body of knowledge.

4. Analysis it can be defined as the ability in the separation of various situations around an individual into sub-components. This must be dependent on either principles or rules to be analyzed until various stages or relationships among sub-component can be clearly seen.

5. Synthesis it can be defined as the ability in the collection of sub-components in order to form the whole body or the completed situation. In other words, it is the concept having a clearly new structure, which is different from the

sub-components of the original one. This is in terms of shape, characteristics, functions, benefits, etc.

6. Evaluation it can be defined as the ability in the value judgment of various stories or things if they are good, bad, or appropriate. This must be based on the determined criterion to be used in the comparison of behaviors.

Theory of Innovation Adoption

Roger and Shoemaker (1971) stated that adoption process is the emotional process of an individual. It begins with the awareness on a new concept and ends with the decision making to adopt it. The adoption process involves learning and decision-making. To adopt a new concept, an individual must pass the 5 stages as follows:

1. Awareness If is the first stage that an individual learns about a new concept but lack of details. Awareness may accidentally occur by self-experience or the extension of concerned personnel. It is an important stage since it is the first step which an individual has found or perceived about a new concept. An individual must be stimulated to be interested in the new concept, which will lead to the last stage or adoption.

2. Interest In this stage, an individual is interested in the new concept. So, he/she tries to seek for details of the new concept. For the awareness stage, an individual may have heard or read a document concerning about a new concept. He/she will ignore if it does not interest him/her. However, he/she will try to contact people who know details of the new concept if he/she is interested in it. It is important to consider how and where an individual seeks for the supplementary knowledge as well as degree of its details.

3. Evaluation An individual investigates details about the new concept and compares the existing one. He/she also thinks about the advantage of the new concept in order to make a decision to try it. In this stage, however, the individual must consult people who know well about the new concept or neighbors who has experience about it.

4. Trial An individual makes a trial on the new concept in order to find out if it conforms to his/her current situation. The individual also wants to know the result of the trial whether it is as expected or not. In fact it is found that most people do not accept the new concept except they have tried it. Therefore, trial is an important stage leading to the last stage or adoption.

5. Adoption it is the stage that an individual has already made a decision to adopt the new concept after making sure on result of the trial.

Although the five stages as mentioned are related to one another like a chain, but each stage may be ignored. Then, stage anytime in the case that any stage does not make him/her be confidence. However, Rogers (2003) proposed a new concept or new theory, which is the process on the decision whether to adopt the innovation (A Model of the Innovation-Decision Process). This can be divided into five stages as follow:

1. Knowledge. This is the stage than an individual is exposed to an innovation's existence and gains an understanding of how it functions for the first stage.
2. Persuasion An individual forms a favorable or an unfavorable attitude towards the innovation.
3. Decision An individual must make a decision whether to adopt the innovation or not. In this stage, he/she may do trials on the innovation.
4. Implementation It is the stage that an individual put the new idea into use.
5. Confirmation It is the stage that an individual is seeking for reinforcement to support his/her decision.

Roger (2003) explained the characteristics of innovation as follows:

1. Relative advantage. That means an individual who has adopted new concepts has considered and compared the new concept with the old one and he finds that the new concept is better. There are many ways to measure that which one is better such as based on economic aspect, we must find which one can give high profit. Convenience, satisfaction, honor, trust etc can be use as a criterion. It can be assumed that people see the importance and benefit of the new concepts and changes.

2. Compatibility This means that the new concept has the characteristic that conforms to the value of an individual, past experience, needs, culture, tradition, skill, etc.

1. Complexity. The new concepts may be complex and is difficult to understand or to apply. This may take long time to make an individual to adopt the new concept.

2. Trial ability. The new concept that has its characteristics contributed to the trial with a small limitation and without any obligation is likely to be adopted quickly. This is because an individual who does a trial feel that it is less risky.

3. Observability The outcome of the new concept can be seen clearly and easily.

2.2 Concepts about video and radio television

The video programs

The video programs are generally known as VDO or video in English, which refers to television tape known by the public (The Royal Academy; 2005, p. 336). According to Webster dictionary, video is a Latin word which mean “I see”. Meanwhile, in the view of the Faculty of Journalism and Mass Communication, Thammasat University, video refers to visual, picture, and image in the movies. The Royal institute dictionary defines video as video programs in which “vide” derives from “viti” in Pali language, which means “light”.

Khongtan (2010: p.36) stated about the video in accordance with the 2008 movie and video Act that video was a material having picture or picture/sound record. It could present motive pictures continually in the form of games, karaoke or any form as determined by the Ministry.

So that it concluded the definition of video that it was a video/audio tape which could record information in various dimensions, e.g. picture and sound presented through television, computer, etc.

Nowadays, video is one component of an agency or daily life activities of individual. All incidents presented by video have an influence to attitudes, beliefs, and feeling of an individual. This is due to the following: service at home; some video programs employ marketing strategies and psychology (e.g. advertisement)

making audiences have impression without consciousness. Hence, video is a media presenting pictures and sound which is resemble to the actual situations. Besides, the video camera can be used easily like shooting a movie. At present, video is a kind of media used in educational purposes. It is a material which can record pictures and sound at the same time. Besides, the recorded pictures and sound can be revised, improve, repeated

Definition of radio television

Free Wikipedia Encyclopedia claims that radio television is a telecommunication system used for sound broadcast and distance sending-receiving motive pictures. In Thailand, Kromanune Narathippongprapan defines the term “Television” in the Thai language as “วิทยุโทรทัศน์” (Radio television).

Hence, the term “radio television (TV) or television” technically means distance sending-receiving signals of motive pictures and sound by using an electronic machine through radio wave (electric magnet wave). In addition, radio television can be understood as a media broadcasting message through picture and sound signals to the mass who receive the message through ears and eyes at the same time (Nanta, 2009: p.16).

Education television (ETV)

Education television is a program presenting general knowledge such as various fields of education, religion, culture, tradition, and arts. In fact, television is a medium having a highest efficiency in the provision of general education service to the public. It is very worthwhile to invest education television.

Nowadays, television is one technology widely used among the public. It is mass communication sending news and information to audiences rapidly. Television can be used in educational activities because it is inexpensive and easy to use. Many schools use closed circuit television by using cable wire or via satellite. The most convenient way is by using picture-recording tape, which is widely used at present.

Khattiya (2012: pp.7-13) claimed that radio television is a media having an effect on learning and presents pictures and sound at the same time. Generally, communication of radio television focuses on a media which can send message (academy and entertainment) to the public very well.

Characteristics of education television

At present, education television is widely used in the country. It is a tool used for conveying meaning, knowledge, tradition, and culture. Besides, education television can help instill good attitude and values to people from generation to generation (Sermthong, 2010: p.96).

Nanta (2009: pp.62-64) revealed about the roles of education television for the public that it is different from formal education. That was, learners (the public) need not to attend the classroom or go to school. Besides, the message or education television program is designed to be easy to understand and it can be applied in daily life activities. It could be said that education television help elevate educational level on quality of life the public who do not have opportunity in formal education.

Therefore, it can be said that education television is very beneficial to the public without limitations. Forms of radio television using for educational purposes are as follows:

1. Informal Education It is the educational service for the public in which a specific knowledge is directly presented, e.g. laws, economy, society, culture, innovative technology, etc. All of these may be in the form of entertainment providing various points of view to be applied in daily life activities.

2. Formal Education It presents the learning content which is consistent with the existing curricular program of the school. This aims to make learners or students have increased experience.

3. Non-formal Education It is the program exclusively for those who do not attend formal education. The learning program is in accordance with the curricular program of non-formal education but based on interest of a group of learners the program may involve career promotion of famers, family health and sanitary, livelihoods, etc.

Television can be an important tool used for educational purposes and it is beneficial to audiences of all levels of education. Thus, it is expected that education television will be widely promoted more than ever. We should investigate more about worthwhile using of television for educational purposes in order to achieve a highest effectiveness of learning.

Steps of television program production

Rungkawat (2012: pp.7-8) claimed that there were 4 steps of television production programs as follows:

1. Pre Production

It is a very important step prior to the production of a television program. This step includes: the preparation of data and proposal outlining; coordination; and material and equipment preparation. Besides, the following must be well prepared: Sound lab, video editing room, video camera, light equipment, presenter, and teamwork, accommodation, etc.

2. Production

This step must be in accordance with the video script. The production teamwork includes director, photographer, electrician, sound technician, graphic designer, and teamwork. Locations for video program production may be both indoor and outdoor the studio. In this step, it may have many takes until it is satisfied. Besides, it needs to keep pictures and sound, general atmosphere, specific pictures, and insert in order to make audience understand and perceive details. Generally, there is a meeting among concerned personnel for preparing video program production and assigning tasks to specialists.

3. Post Production

This is step of video editing (pictures and sound) in accordance with the script. This step includes the following: graphic using, special technique doing, picture improving, dyeing, and picture connecting. Sound recording may be done in the sound lab. Music may be used for an increase in aesthetic quality. This step is mostly in the editing room but it has many limitations, e.g. adding various special techniques which need complex and modern tools. Time span of this step is dependent

on time span of the video program, picture recording, details adding, and difficulty of each theme. All of these may last 3 days, 7 days or even more than 15 days.

4. Distribution

Assessment must be done before the distribution to audiences. Minor correction (pictorial/graphic illustration and sound) must be complete. However, new video program producers often overlook this step even though it is also important.

2.3 Graphic and Pictorial Illustration

Malithong (2005; pp. 145-146) mentioned that picture is an important medium since it transmits abstract to concrete; making learners to have a better understanding. Pictures were firstly used as a teaching medium in 1658 by Comenius. He placed the importance of pictures as a medium of teaching. Thus, he constructed a lesson with pictorial illustration called “The Orbis pictus” used for students learning Latin language and Science. Its content includes God, the world, air, plants, man, etc.

In 1955, there was a great change; that was; Soul Bass exhibited his achievement in a movie entitled “The man with the golden arm”. With this movie, the public began to perceive the importance and have pictorial illustration in the movie. William Golden joined a group of first grade designers and successfully worked with technicians of many television stations in Great Britain. In 1956, Richard Levin, head of Graphic Design of the B.B.C. Television Station, placed the importance of pictorial illustration and laid the foundation of progress of the pictorial illustration. He also persuaded new designers of pictorial illustration to join his team work.

Teaching staff of the Department of Technology and Educational Innovation (1996; p. 59) claimed that graphic has a root word from Latin called “Graphikos” which means picture. Drawing material is a teaching medium obtained from writing or drawing to present facts or concepts. It is the combination of pictures, symbols, and statements, which helps learner have a better understanding on learning. Drawing materials can be classified into the following: chart, graph, diagram, poster, and cartoon or comic.

In the same meaning, Wittich and Shuller ascribed by Prachusilpa (2000; pp. 100-101) classified types of graphic material in the book “Audio Visual Materials” as follows:

1. Graphs - It involves figures, which are difficult to understand. However, it will be easily understood if these figures are transformed into graphs.
2. Diagram- It is rather similar to graphs. However, diagram is the model of reality by using shortening or expanding the size.
3. Chart - It is also rather similar to graphs and diagram. It must be attached on a piece of calico or thick paper before using if it has a big size.
4. Poster - It is used as a medium to draw interest such as advertisement, exhibition, various campaigns, etc.
5. Cartoon - It is an easy drawing picture which draws interest without much explanation
6. Comic - It is cartoon pictures of a short story. It is different from cartoon because it contains many pictorial illustrations.

To teach learners to have skills in meaning interpretation and the creation of a story to transfer concepts, the pictorial illustration must be appropriate and conform to the learning objectives. The following must be taken into consideration when designing the pictorial illustration:

1. Appropriate arrangement of components. Positioning and direction laying of various lines must be balance with perfect light and color
2. Clearly convey of meaning must be done. It should have a limitation on what to be focused so that the audiences will get what to be conveyed correctly.
3. It must be colorful. The colors used in the picture should conform to the fact and natural colors.
4. It must be distinctive with clearly prominent focusing. This can draw interest of audiences (Malithong; 2005, p. 149).

Nieanchaleoy (printing date is not identified, p. 55) stated about graphic works that designing is an important thing to achieve the goal. This must be dependent on the following 4 aspects:

1. Use - a high level of utilization with objective conformity and appropriate with the target group
2. Economy - a good design must be focused on economic purpose. That is, it is worthwhile to the product costs and time.
3. Beauty - it must be attractive in terms of shape, color, and design.
4. Individuality- it is the core of design.

To achieve the goal of the 4 aspects as mentioned, it must be dependent on the following:

- a. Experiences
- b. Skills
- c. Principle appreciation

Importance of Graphic

Prachusilpa (2000: p.103) claimed that graphic materials are very important equipment. Aside from advertisement business, it can be used for convenience facilitation into 3 forms:

1. Explanation Graphic materials help audiences understand what they are watching or listening. Explanations, for distance, line drawing help convey meaning, e.g. diagram, graph, etc.
2. Exhibition/Supervising board Graphic materials help the exhibition/ supervising board achieve the goals.
3. Transparent optical materials can be used for slide, transparent shut, etc. So as to be used as public relations media (e.g. television and movie need it for title preparation and graphic illustration).

This conforms to a study of Prachusilpa (2000; p. 103) that graphic materials are valuable equipment. Aside from the advertisement business and public relations, graphic materials can facilitate convenience in the 3 aspects:

1. Lecture Graphic materials help audiences to have a better understanding. For example, using drawing materials such as diagram and graphs can help convey the meaning effectively.

2. Exhibition Graphic materials can help the exhibition to achieve the goals.

3. Public relations Slide, transparent sheet and others are used for public relations of television and radio. Graphic works also play important role such as title preparation and story explanation.

Malithong (2005; p. 150) stated that picture designing for learners to do activities of each learning objective is usually different from each other. Therefore, picture designing for teaching and learning activities must place the importance of learning objective analyses based on cognitive domain, effective domain and psychomotor domain.

Cognitive domain Examples is memorizing, principle analyzing and concept. Content designing must be focused on the correctness and an opportunity of learners to review their mind for the perception of some things. Also, it focuses on clear details and sequence of thought or objects for the occurrence of concept.

Affective domain Examples is motivation and the development for the awareness of value. Thus, the content must interest an individual rapidly. The attraction of a picture is the most important thing.

Psychomotor domain Examples is exposure, action, and practice. It must be focused on clear meaning of a picture. Also, concerned skills must be practiced.

2.4 Concept of the Sufficiency Economy Philosophy

Sufficiency economy is the philosophy initiated in 1974 by His Majesty the King so as to be a guideline for livelihood and country development. It is also aimed to provide a guideline for solving problems as a result of economic crisis. This helps us have a stable livelihood under the age of globalization.

Phanthasen (2008; p. 12) stated that sufficiency economy is the philosophy explaining a guideline for livelihood of people of all levels; ranges from a family level, community level, and national level. It also includes the country administration and development, which is particularly on economy development.

On December 4, 1997, His Majesty the King delivered Royal address on “The Sufficiency Economy” to various personnel on the auspicious occasion of his birthday anniversary at Dusitdalai pavilion, Jitlada garden, Dusit palace. The following is one part of the Royal address:

“Actually, I often used to speak in this meeting that it is not important to be a tiger but it is important to have a moderate economy. That is, we can be self-reliance. Sufficiency does not mean that every family must produce their own food or weave cloth for their clothing. However, people in the village on district must have adequacy. Moreover, if they can produce the yield which is more than enough the surplus can be sold in the neighboring areas since it helps reduce transportation cost. Many economists may think that it is out of date. It might be true for commercial economy. However, Thailand has potential in agricultural yield production. Rice, for instance, used to be promoted to produce just enough for household consumption in which some people perceive that it is inappropriate. But in the case of E-san region, I think it is correct to grow jasmine rice for the commercial purpose: This is because people there prefer to consume sticky rice”.

Tantiwetchakul as cited by Amorntham (2006; p. 24) defined the meaning of “sufficiency economy” as relative self-sufficiency and without troubles. That is, people must build an appropriate self-economy foundation; not only uplifting their economic status. People who have career and condition contributing to be self-reliance usually able to further create economic progress.

Phanthasen (2008; pp. 36-41) stated that the foundation of the philosophy of sufficiency economy as inter presented by various fields of scholars as shown in the chart by the National Economic and Social Development committee are:

1. Moderation
2. Reasonableness
3. Self immunity

These are under the condition of knowledge and virtue

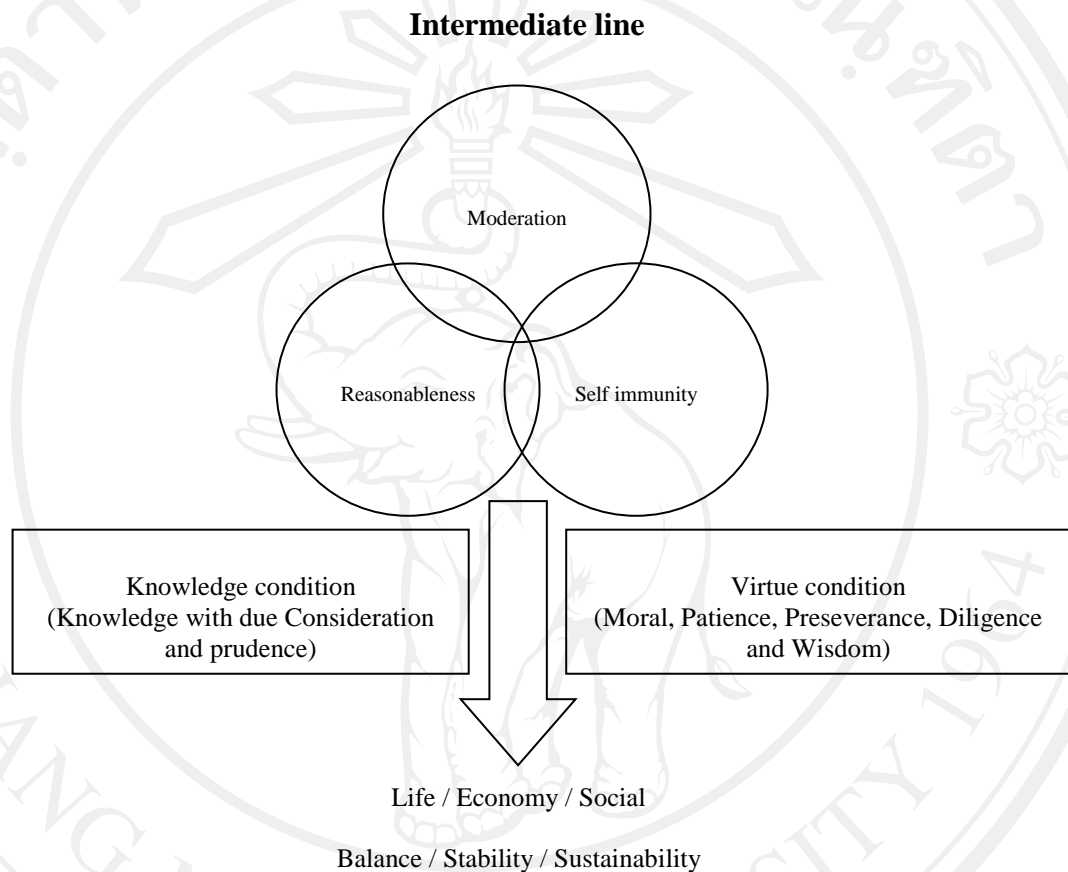


Figure 2 The Sufficiency Economy Philosophy Framework

Intermediate line can be referred to modesty; not too much, not too fast, or not too serious etc. Modesty depends on the condition of various components that have changed. That is, a thing having modesty under the condition of a particular time and place may become to be not modesty in another time and place. The principle of intermediate live development and progress is under the cultural dynamic having systematic changes.

Modesty can be referred to as any action that is done modestly or not over action and without greed and debts. The existing capital must be taken into consideration and carry out any task relevant to the existing capital and without any persecution.

Good immunity can be referred to as the preparation to cope with the impacts and various changes that will occur. The modesty and reasoning are main factors or the strong foundation that will cause the occurrence of good immunity. However, the society always moves or change all the time so it needs improvement in various aspects of the society. That is, it aims to maintain livelihood of people as well as to cope with changes or impacts in the society.

Knowledge and virtue to be successful in the sufficiency economy, it needs knowledge, carefulness, and cautiousness in the application of planning and implementation of each step. Meanwhile, reinforcement on spirit of people in the country must be promoted; particularly government officials, theorists, and businesspersons of all level. The spiritual reinforcement must be focused on ethics, virtue, honesty, courteousness, diligence, etc.

Wasri as cited by Amorntham (2006; pp. 26-28) mentioned about the sufficiency economy that it should comprise at least 7 aspects as follows:

1. Sufficiency for all with unity
2. Spiritual sufficiency - kind heart and having good will toward others.
3. Environmental sufficiency - environmental conservation and enrichment in order to earn a living.
4. Sufficiency in strong community - community unity can help solve community problems.
5. Sufficiency in problems - learning through co-working and the ability in continual self-adaptation.
6. Cultural sufficiency - the economy should be related to cultural basis which will result in cultural and economic stability.
7. Stability sufficiency - stability in livelihood or social and economic stability.

Sufficiency economy is an intermediate way of life which clings to the principle of self-reliance as follows:

1. Spirit

- Be self-reliance
- Good consciousness
- Self and nation creation
- Kind heart and compromise
- Awareness of common benefits

2. Society and community

- Help one another
- Establish strong community networks

3. Natural resources and environment

- Smart management
- Awareness of the value of natural resources and environment
- Importance of the basis of sustainable conservation and exploitation

4. Technology

- Utilization of local and modern technology which conform to needs and environmental condition.
- Utilization of local wisdom
- Technological development of our local wisdom

5. Economy

- Increase an income
- Decrease expenses
- Savings

Conclusion of the Philosophy of Sufficiency Economy

The philosophy of sufficiency economy points out livelihood and an appropriate way of life of people of all levels. It suggests that the development and administration of the country should be in an intermediate way. This is particularly on economy development which conforms to the age of globalization.

It can be further explained that the concept of sufficiency economy is a guideline for earning a living of the Thai people. It also encourages the people to moderately earn a living and without the dependence on various external factors. Importantly, they must learn how to be self-reliant by exploiting the existing natural resources.

Earning a living in the system of sufficiency economy can be sorted into 2 levels:

1. Sufficiency economy in a general people level
2. Sufficiency economy in a farmer level

Sufficiency economy in a general people level this is the ability to earn a living without troubles. People have a moderate livelihood which conforms to their economic status. They are not consumerism or materialism and they have freedom in doing careers or any activities suited to them. Besides, they are self-reliant

Sufficiency economy in a farmer level this is the type of economy that farmers focus on self-reliance. They use their knowledge and potential for the managerial administration of their farmland; particularly on water sources and agricultural activities. The first step of the New Theory was used for the foundation of sufficiency agricultural production and natural resources. That is, the diversity of agricultural activities in which one activity contributes to another one. Besides, family workforces can do supplementary activities for an increase of household income. This can also reduce production costs in mixed farming.

The New Theory of Agriculture in Accordance with the Royal Initiatives The New Theory is an important one which His Majesty the King initiated based on local wisdom. This is aimed to strengthen the community by applying the principle of the sufficiency economy theory for solving poverty problem. It can be said that the New Theory concept is part of the sufficiency economy. It focuses on problem solving in the agricultural sector and rural areas of the country. This consists of 3 steps:

Step 1 Basic New Theory the basic status of the farmers are small-scale farmers and farming areas are dependent on rain. The purposes of this step are to create production potential; food security; income stability; life security; rural community stability; and self-reliance. There is the allocation of land for living and cultivation. A piece of land is divided into 4 parts: 30, 30, 30, and 10 Each part is

used for the following: pond construction for farming during the dry season; rice growing during the rainy season for household consumption; or charring, crop and vegetable growing; and residential area, animal domestication and other structures, respectively.

Step 2 Intermediate New Theory After the farmers understand the principles of the New Theory and successfully implement it, they group themselves as a farmer group or cooperative with the purposes of the following:

1. **Production** the farmers must mutually produce the yields; beginning from soil preparation, plant varieties finding, fertilizer finding, water finding, and others for plantation.
2. **Marketing** the farmers will find markets for their yields. They also have to prepare common rice drying floor, common rice barn, and rice milling machine.
3. **Livelihood** the farmers must prepare themselves for their standard of living especially in terms of food security.
4. **Welfare** Each community should have welfare and needed services such as public health station and loan funds for development activities.
5. **Education** School and community play important role in the promotion of education. It should have a fund for educational promotion to assist the youths who have less opportunity in education.
6. **Society and religion** the community should be the center for social and spiritual development in which religions are emphasized.

These activities as mentioned must be coordinated by all concerned parties which include community members, government sector, and private sector.

Step 3 Advanced New Theory In this step, the farmers will have an increase of income. The farmers or farmer group should be prepared to develop him or her by coordinating for finding capital or sources of capital such as banks and private companies. These concerned agencies will have common benefits in the following:

- The farmers can sell rice without under pricing
- The banks and companies purchase rice in a low price (direct purchase of paddy and self rice milling)
- The farmers purchase commodities in a low price because they group themselves for buying it in a great amount.

- The banks and companies are able to distribute its staff for carrying out various activities

At present, the new theory of agriculture is applied in various centers for development and the Royal Initiatives Projects. Besides, the Department of Agriculture has done 25 demonstration plots throughout the country. Not only this, this theory is adopted by the Department of Community Development, the Ministry of Interior, the Supreme Command Headquarters, the Ministry of Defense, and the Ministry of Education.

Amorntham (2006; pp. 43-44) stated about the Royal Initiatives and the New Theory as follows:

1. It is the practice method of farmers who own a small piece of land
2. It promotes the farmers to be self-reliant in a thrift level and they must have uniformity.
3. The farmers must have enough rice to be consumed all year round (5 rai per family).
4. During the dry season, the water must be available for at least 1,000 cubic meters per rai (The pond size is 3-4 rai with 4 meters in depth and the approximate total amount of 19,000 cubic meters).

2.5 Related researches

The previous decade, there were not many experimental researches concerning about agricultural communication; particularly on the video programs. The following research results were revealed:

Buncherdrit (1994) had conducted a research on cognitive domain learning of farmers watching DVD with different story operating techniques as follows:

1. The video program with a correct story operating method
2. The video program with the combination of a correct and incorrect methods
3. The video program with the combination of a correct and incorrect methods but there is × or ✓ superintending.

Based on this study, it was found that the farmers learning through the third video program (pot planting) had a highest level of learning but a lowest level of learning in the first video program.

Phiewsaard (1992) had conducted a study on the influence of camera angel and pictorial illustration on skill learning of farmers in Nongyaeng sub-district, Sansai district, Chaing Mai province. He used 3 different camera angels; audiences, operator, and audiences/pictorial illustration. It was found that the farmers obtained a highest score in the operator angel. For skills of farmers in mango branch pruning as part of a study of Kerdeiang (1998), it was found that the farmers learning through the video program focusing on the red circle position had a highest level of skill learning.

Khongleab (1993) had conducted a study on the skill learning achievement of farmers through different the video programs presentations using the following techniques:

1. Presenting the video program until finishing and having the farmers practice immediately.
2. Presenting the video program step by step and having the farmers practice after finishing each step.
3. Presenting the video program until finishing, then revising important steps by the teacher and after that the farmers are told to practice immediately.

Results of the study showed that there was a difference in learning outcome of the farmers. For the skill learning scores based on the 3 techniques as mentioned, it was found that the third technique had a highest score and followed by the second technique.

Taraphichattrakul (1991) had conducted a study on the outcome of cognitive domain learning through the video program using stimulant and the video program using intermittent questions during the presentation of farmers in Baan Kard sub-district, Sanpatong district, Chaing Mai province. This study was aimed to compare the learning outcome of cognitive domain learning of three groups, of the farmers having 40 farmers each. Three types of the techniques employed were:

1. Normal video program
2. The video program having stimulant
3. The video program having stimulant questions

Results of the study revealed that there was no difference in the learning outcome through the video program using stimulant, the video program having pictorial illustration, and the video program using intermittent questions.

Kettakhu (1998) had conducted a comparative study on cognitive domain learning on the topic of the influence of different techniques on story presentation in the production of the video program on learning performance of the farmers in Maefaek Mai sub-district, Sansai district, Chaing Mai province. The different techniques on the story presentation were as follows:

1. The video program using the correct method of story presentation
2. The video program using the incorrect method of story presentation intermitted with the correct method for each step (using the x and/marks)
3. The video program using the incorrect method presented at the same time with the correct method (using the x and/marks)

Results of the study revealed that the second technique has a highest level of influence in learning outcome.

Taochaiyaphum (1991) had conducted a comparative study on the outcome of cognitive domain learning of the farmers watching video program on results of technique using for the production of video program towards the level of cognitive domain learning of farmers in Baan Sadet sub-district, Lampang province. There were there techniques employed in this study:

1. Normal video program
2. Sub-topic presentation
3. Sub-topic and main point presentation

It was found that there was no difference in the cognitive learning outcome among all of the three techniques.

In a study of Janjomsuk (2004), he found that computer assisted learning with motion pictures had an influence in obtain a highest score. This was followed by pictorial illustration and cartoon pictures, respectively. Suriyong (2001) found that the program production using the correct method of the three pictures and followed by the incorrect method influenced a highest level of learning outcome in terms of computer-assisted learning. This conformed to a study of Inchan (2006) on the cognitive domain learning achievement using different techniques for creating interest

of students, Rajamangala Institute of Technology, Northern campus, Chaing Mai. The following techniques employed for teaching basic knowledge on offset printing system were:

1. The video program presenting normal steps.
2. The video program creating interest by using arrows together with the characters.
3. The video program creating interest by focusing on clear pictures of some points

Based on this study, finding showed that the second technique had a highest level of the learning outcome.

Khiewdaeng (1995) found that television was used in the short course farmer training most. It can be said that the research on agricultural communication particularly on the experimental one still be small in amount compared to educational research. As a whole, it was found that sequencing of the importance of content and the supplementation of theories or concepts on how agricultural communication can help reduce the attempt and increase motivation to audiences.