

## Chapter 2

### Review of Related Literature

In this research, related literature was reviewed on the following issues.

1. Concepts of The Philosophy of Sufficiency Economy
2. Integration of The Philosophy of Sufficiency Economy in educational institutions
3. Teaching and learning management of an integrated curriculum
4. Concepts of Learner-centered in teaching and learning management
5. Authentic assessments
6. Analytical thinking
7. Content-based instruction
8. Maejo University core values
9. English for Agriculture Course (Ge243)

#### 1. Concepts of The Philosophy of Sufficiency Economy

“Sufficiency Economy” is a philosophy conceived and developed by His Majesty Late King Bhumibol Adulyadej of Thailand over 60 years of tireless development work to improve the lives of the Thai people and bring them a genuine and lasting happiness. The goal of implementing the Sufficiency Economy Philosophy is to create a balanced and stable development, at all levels, from the individual, family and community to society at large by developing the ability to cope appropriately with the critical challenges arising from extensive and rapid changes (i.e. globalization) in the material, social, environmental, and cultural conditions of the world.

The principle of Sufficiency Economy stresses the importance of following / adopting the middle path for appropriate conduct by the population at all levels of society (individual, family, community and nation) in terms of development and

administration in order to modernize in line with the forces of globalization. In other words, we should try to avoid extreme thoughts, behaviors and actions.

The Philosophy of Sufficiency Economy has three components: moderation, reasonableness, and self-immunity, with two accompanying conditions: appropriate knowledge and ethics & virtues.

1. Moderation within reason, in the sense of not too much or not too little, is an Eastern concept.

As His Majesty the King has stated: *“Being moderate does not mean being too strictly frugal; consumption of luxury items is permitted... but should be moderate according to one’s means”* (Royal Speech, given at Dusit Palace, 4 December 1998)

2. Reasonableness requires that the choices we make be justifiable by using academic approaches, legal principles, moral values or social norms.

3. Self-immunity emphasizes the need for built-in resilience against the risks which arise from internal and external changes by having good risk management; Sufficiency Economy recognizes that the circumstances and situations that influence our lives are dynamic and fluid.

- Immunity to changes in material circumstances implies having enough savings, being insured against financial risks, and making long-term future plan.

- Immunity to social changes signifies unity among the people, along with their contentment and feeling at peace.

- Immunity to environmental changes prompts individuals and their communities to be aware of the impacts their actions may have on the environment, and subsequently their livelihoods, an awareness which leads them to live in harmony with nature.

- Immunity to cultural changes means that the people appreciate and value their culture and heritage and do not waver in their determination to uphold them. They also understand and have a positive attitude towards cultures of others.

Knowledge is a necessary condition for Sufficiency Economy to work, as comprehensive knowledge and academic approaches play important roles at every stage of planning and implementation.

Ethics and virtues are vital and will foster human development in a way that is successful and sustainable. These values ought to be embraced by all, particularly by civil servants, intellectuals and business people. In recent years, good corporate governance has been guided by ethics as a core value.

Foundation-building as a crucial first step to development. *“The development of the country must proceed in stages. First of all, there must be a foundation with the majority of people having enough to live on by using methods and equipment which are economical but technically correct as well. When such a secure foundation is adequate and ready, then it can be gradually expanded and developed to raise prosperity and economic standards to a higher level by stages.”*(His Majesty the King’s Royal Address, given at Kasetsart University, 18 July 1974)

### **Accomplishments**

- Sufficiency Economy is central to alleviating poverty and reducing the economic vulnerability of the poor.
- Sufficiency Economy is a means towards community empowerment and the strengthening of communities as the foundations of the local economy.
- Sufficiency Economy takes corporate responsibility to a new level by strengthening the community so it can embrace practices conducive to long-term profitability in a competitive environment.
- Sufficiency principles are vital for improving standards of governance in public administration.
- Sufficiency Economy can guide national policy to immunize a country against shocks, to craft better policies, and to plan strategies for more equitable and sustainable growth.

Sufficiency thinking demands a transformation of human values, and a revolution in the mindset, both of which are necessary for the advancement of human development. From these principles and advantages, The Philosophy of Sufficiency Economy was applicable and should be transferred to people in all levels. From this reason, analytical thinking ability based on the Philosophy of Sufficiency Economy should be promote in learners, especially in the field of agriculture. As agriculture is the

foundation of living and country development, development of personnel resources with moderation, reasonableness, and self-immunity would bring sustainability to country.

## **2. Integration of The Philosophy of Sufficiency Economy in educational institutions**

The Ministry of Education has integrated Sufficiency Economy principles into the school curriculum with the purpose of teaching children from an early age how to be self-reliant and live a balanced life. It has also provided training for teachers, school administrators, and educational supervisors, so that they have better understanding about this concept, which will be transferred to their students.

The Sufficiency Economy way of thinking has been integrated into the school curriculum since 2006. A large part of the teaching is practice and participatory. Children at the lower primary level learn how to keep their own income-expenditure balance sheets as a tool to make better use of their money and time. Later, they take part in savings schemes, projects to learn the value of frugality through recycling items used at school, and growing garden vegetables for use in school meals.

At the secondary level, children work on community development projects, take part in activities at the local temple or mosque, and develop projects to promote local wisdom, conserve local historical sites, and sustain the inheritance of Thai culture. A special emphasis is placed on local projects for environmental conservation.

At the undergraduate level, the principles of the Philosophy of Sufficiency Economy have been applied in educational management and academic courses and programs. For educational management, year plans of many academic institutions were revised for the proper cost management and risk management. For academic courses and programs, traditional curriculum has been revised to focus on the learners' outcomes. Learners were promoted for higher analytical thinking ability to cope with the unexpected changes in society. In addition, new curriculum and courses have been designed with an integration of The Philosophy of Sufficiency Economy with an intention to produce graduates with applicable knowledge for specific purposes.

Experiments on integrating the Sufficiency Economy into the way that schools are run have been carried out in welfare schools that provide children of poor families with a free education, including accommodation, food, and clothing. Under the auspices

of Her Royal Highness Princess Maha Chakri Sirindhorn, these schools have launched a program to make the schools more self-reliant. The students engage in planting vegetables, raising poultry, and other activities to provide the school with necessities. This project not only reduces the costs of running the schools and earns money for the students' families but also acts as practical education in the values of the Sufficiency Economy.

Another scheme has been launched to provide children with training in the use of computers and the Internet without incurring the costs this would normally imply. The project solicits donations of computers from the public and teaches children use of the Internet offline through the use of specially prepared content discs. This avoids not only the cost but often the practical impossibility of setting up an Internet connection in the remote areas where some of these schools are located.

According to the Ministry of Education, assessments have been made in developing the Sufficiency Economy philosophy as an educational quality index from 2007 onwards. Between 2007 and 2013, almost 15,000 schools across Thailand have passed a Sufficiency Economy assessment. A total of 68 educational institutions have so far been developed as Sufficiency Economy Learning Centers for Education.

The Philosophy of Sufficiency Economy was included in the National Economic and Social Development Plans No.9 (year 2002 to 2006) and later on, with the aim to restore economic stability along with creating ethical learning. However, some people still misunderstand the concepts of the Philosophy that it was practical for traditional agriculture only. Actually, The Philosophy of Sufficiency Economy is practical to all levels application.

The Sub-Committee on Propulsion of The Philosophy of Sufficiency Economy which has the authority to study, formulate objectives, implement the guidelines and manage the programs under the campaign, had to implement the learning process with variety target groups. One of the main target group is youth, an important human resource for country development, and budget management of the Sufficiency Economy Project to upgrade existing communities. The aim is to transfer the principles and the sufficiency characteristics, able to use the principles in daily life and apply the principles for analytical thinking. (Jirayu Isarangkura Na Ayutthaya, 2005, 4-6).

To develop The Philosophy of Sufficiency Economy as a part of the teaching, The Sub-Committee on Propulsion of The Philosophy of Sufficiency Economy has implemented in both theoretical (abstract) and practical (concrete) practice. For the theoretical practice, there were the contest of teaching media promoting The Philosophy of Sufficiency Economy to raise awareness in educational institutions across the country to disseminate and communicate the actual meaning of the philosophy. The aim was to make the target group realize the benefits of adopting the principles for living and extend the philosophy concepts in broader areas.

In terms of concrete development, there were recruiting schools in various regions. The aim was to promote the application of The Philosophy of Sufficiency Economy through the school activities via school partners. Activities such as writing compositions and school activity contests based on the philosophy has been conducted for better understanding and knowledge exchange.

To work in line with The Sub-Committee on Propulsion of The Philosophy of Sufficiency Economy, The Sufficiency Economy Integration Committee of the Ministry of Education introduced of The Philosophy of Sufficiency Economy to use in 3 levels. (Ministry of Education, 2009, p. 3-4).

- 1) Application of The Philosophy of Sufficiency Economy to the management of education.
- 2) Application of The Philosophy of Sufficiency Economy in curriculum and teaching
- 3) Application of The Philosophy of Sufficiency Economy in activities for learner development.

#### **1) Application of The Philosophy of Sufficiency Economy to the management of education**

Sufficiency Economy Principles can be applied to management at all levels. To follow the National Economic and Social Development Plan, government agency especially educational institutes has adopted this philosophy as a guideline for management. This may include:

1. Revise, improve, develop, structure and manage the process in accordance with or support for the Sufficiency Economy. The emphasis is on the management of good governance with moderation, reasonableness, and self-immunity.

2. Define policies, plans, projects, activities and develop a strategic plan that covers the development of education in accordance with the Philosophy of Sufficiency Economy in schools. There must be a systematic implementation of the plan, a continuous monitoring and evaluation.

3. Raise awareness for people in organization and stake holders to understand The Philosophy of Sufficiency Economy and be ready to implement the educational management system in accordance with the Philosophy of Sufficiency Economy.

4. Manage the educational supervising system within schools to develop the management system and teaching process in accordance with the guidelines of the Philosophy of Sufficiency Economy education in schools.

## **2) Application of The Philosophy of Sufficiency Economy in curriculum and teaching.**

Educational institutions should provide the contents and curriculum in accordance with the contexts of learners. Instruction must focus on analytical thinking and hand on practice. The guidelines are as follows.

1. Organize learning activities that focus on the practice of thinking skills, analytical thinking, and problem solving from the minimal level of daily life and make connections to families, communities, societies, nations and the world.

2. Organize learning process that focus on experiment, authentic practical in both educational institutions and outside learning resources. The form could be various like individual projects or group studies.

3. Assessments and evaluation must cover 3 aspects; Knowledge, Process, Attribute

## **Writing an Integration of The Philosophy of Sufficiency Economy Lesson Plan**

Educational Institutions must design courses, curriculum, learning instruments, learning resources, and learning assessments in accordance with The Philosophy of Sufficiency Economy. Educational institutions can add up the course or curriculum based on geographical contexts, learners' contexts, environment and community as well. Writing an integration of the Philosophy of Sufficiency Economy lesson plans guidelines are as follows.

1. Focus on the Philosophy of Sufficiency Economy (3 Pillars and 2 Conditions) in every step with the aim to develop the expected learners' outcomes.
2. Focus on social contexts because social contexts are important issues that could be used in development of expected learners' outcomes.
3. Strategic in teaching is instructors must teach virtue and disciplines to learners. Learners must realize that they are a part of the society. Therefore, caring other people, environment, society, and culture are essential.
4. Focus on learners' participation, learners need to demonstrate their ability to analyze the problems with reasonableness. Instructors must facilitate and stimulate learners to share ideas with creativity and openness in sharing opinions.

### **3) Application of The Philosophy of Sufficiency Economy in Activities for Learner Development.**

Educational institutions must organize variety of activities. The activities could be as follows.

1. Aims of the activities is to enhance or develop activities in accordance with the context and society.
2. The activities must be voluntary with the support of teachers.
3. The activities must encourage students to use analytical thinking with academic principles.
4. Activities must be carefully planned and taking into account the risk management according to The Philosophy of Sufficiency Economy.
5. Learning activities must promotes actual learning and virtue.



Examples of activities may discipline in spending and saving money, working and earning, awareness of living in society, community assistance, conservation of local wisdom, or conservation of Thai culture.

### **Integration of The Philosophy of Sufficiency Economy in Undergraduate Level**

The Philosophy of Sufficiency Economy in higher education has been widely implemented in many institutions. It is included in the curriculum or training in undergraduate level, master degree level, and doctoral degree as well. In addition, there is a network of learning exchanges to develop knowledge between universities. Training on the application of the Philosophy of Sufficiency Economy to outsiders also provided. The development of textbooks by making connection between The Philosophy of Sufficiency Economy are other theories or concepts are also created as well.

There are also numbers of research and dissertations related to The Philosophy of Sufficiency Economy, which have created a wide range of knowledge for the benefit of all sectors. The supporters were from many organizations such as The National Research Council of Thailand and King Prajadhipok's Institute. The Ministry of Education has also included The Philosophy of Sufficiency Economy in its 15-year longitudinal study plan (2008-2022) in order to continuously drive higher education in the long run. (Prayanut Dhammaya, 2012, p. 89)

Present, educational institutions in the higher education sector have embraced The Philosophy of Sufficiency Economy in the implementation and management of teaching and learning such as the following universities.

#### **National Institute of Development Administration**

The National Institute of Development Administration (NIDA) established The Center for the Study of Sufficiency Economy in 2004 to study and develop body of knowledge in The Philosophy of Sufficiency Economy such as The Philosophy of Sufficiency Economy and management development, The Philosophy of Sufficiency Economy and Thai society. It also organizes activities and seminars on the philosophy and make public relation through the website, academic readings and speakers of the institute.

The National Institute of Development Administration (NIDA) has established The Center for the Study of Sufficiency Economy since 2004. It is an independent agency directly supervised by the President of the university. The objective is to create awareness and realization of the people in The Philosophy of Sufficiency economy that His Majesty the King has been given to Thai people for more than 30 years, focusing on moderation, reasonableness, and self-immunity with knowledge and virtue. The application can be with the national administration such as the economic, organization management, or at family level.

### **Vision and Mission of The Center for the Study of Sufficiency Economy, National Institute of Development Administration**

The Center for the Study of Sufficiency Economy has set the vision to be the center of knowledge and information on The Philosophy of Sufficiency Economy and Development. National Institute of Development Administration has the missions as follows.

- Conduct research and develop body of knowledge in The Philosophy of Sufficiency Economy. Encouraging faculty members to participate in the development of body of knowledge and transferring The Philosophy of Sufficiency Economy
- Participate and support the institution in educational activities, doing research and training to disseminate knowledge of The Philosophy of Sufficiency Economy.
- Become a network with outside organizations to drive the application of The Philosophy of Sufficient economy

### **Objectives of The Center for the Study of Sufficiency Economy**

To follow the above missions, The Center for the Study of Sufficiency Economy has set up 5 objectives in running the center.

1. Teaching Philosophy of Sufficiency Economy and Development Course at the master's degree level.
2. Conduct research to develop body of knowledge on The Philosophy of Sufficiency Economy by encouraging academic staff both inside and outside the institute to participate in the research on Sufficiency economy.

3. Develop training courses and collaborate with internal and external institutions.
4. Promote dissemination of knowledge and activities on Sufficiency Economy in journals, articles, publications and other electronic media.
5. Support Sufficiency Economy collaboration with organizations inside and outside the country to promote the Sufficient Economy.

### **Maejo University**

Maejo University organizes The Philosophy of Sufficiency Economy in the Master's degree program of Sustainable Development. The program focuses on creating a better understanding in rural development that suitable for the social geography. This is in accordance with the vision of the university as "a leading university with an international excellence in agriculture" (Maejo University, 2013).

The university has carried out many activities such as the integration of New Theory Project from the royal guidelines, Lanna Cultural Center in Agriculture and Maejo Way of Trace in Agriculture. The university also organizes international training to educate The Philosophy of Sufficiency Economy. For example, training with the Office of International Development Cooperation (SOS), Ministry of Foreign Affairs. The university offers an International Training Course of Sufficiency Economy in Agriculture between 2-31 May 2013 at Maejo University International Education and Training Center to disseminate knowledge and understanding of Sufficiency Economy in Agriculture.

The trainings were held with 17 participants from 16 countries: Maldives, Morocco, Cambodia, Mozambique, Timor-Leste, Nepal, China, Myanmar, Philippines, Sri Lanka, Zimbabwe, Malaysia, Madagascar, Samoa and Thailand, both on theoretical and on the job training. The purpose was to help the training participants learned from the authentic implementation.

### **Bodhivijjalaya College, Srinakharinwirot University**

Srinakharinwirot University realized the value and significance of The Philosophy of Sufficiency Economy Philosophy and would like to make the academic mission more concrete. Therefore, the university has expanded its focus to developing

collaborative networking processes with the government sector and private sector by signing a memorandum of understanding to implement Sufficiency Economy Project for Alternative Energy and Water Resource Forests in Sa Kaeo Province on March 10, 2007 at Sa Kaeo Provincial Academic Center. The objectives were as the followings.

1. To promote the process of learning and managing knowledge under The Philosophy of Sufficiency Economy at the family and community level.
2. Establish a farmer group and develop community enterprise network to solve the problems that people are having.
3. Define as a policy of Sa Kaeo Province to promote and support the rehabilitation of soil, water, and forest by promoting the reforestation of 3 types and 4 benefits with 5 kinds of plants in accordance with his royal initiation. Promote organic farming using organic farming methods to solve the drought crisis in Sa Kaeo Province.
4. Reduce growing areas of different kind cash crops. Promote alternative energy crops, reduce import of energy from foreign countries for self-reliance.

### **Siam University**

Siam University is committed to working with communities around the campus. The university encourage students to apply The Philosophy of Sufficiency Economy to their life and work after graduation. In collaboration with UNESCO, the university disseminate knowledge of The Philosophy of Sufficiency Economy to the world.

For instructional management in general education courses of Siam University, the purpose is to incubate students into well qualified citizens with responsibility, having independence, good systematic thinking, good human relationship and good understanding of The Philosophy of Sufficiency Economy philosophy. The objectives of these subjects were to integrate the philosophy with reality through Character Building.

From the guidance and application in the university level, most universities offer the course with an integration of The Philosophy of Sufficiency Economy. The integration could be various depending on the contents and the purposes of the subjects. The integration of the philosophy can be considered as followed.

### 3. Teaching and learning management of an integrated curriculum

Teaching and learning management of an integrated curriculum is teaching learners to understand the connection of intra-disciplinary or inter-disciplinary. The objective is to make learners apply the body of knowledge to daily life. Integrated Learning Management is the process of organizing the learning experience based on the interests, abilities, and the content of related science to change the learner's behavior. Learners are expected to bring knowledge, skills and attitudes to solve problems and use in their daily lives.

The fact that Thailand has enacted the National Education Act BE 2542, which is an act that focuses on education reform of the country. Management in teaching and learning was focused on students' opportunity to learn throughout their life. Learners should able to study on their interests and get quality education services from the state. In terms of teaching and learning, the National Education Act, 1999, is mentioned in Chapter 4, Education Management.

No.22, Education must be based on the principle that all learners have the ability to learn and develop themselves. The educational process must encourage learners to develop naturally and fully.

No.23, Educational management in formal and non-formal education must emphasize the importance of moral, knowledge, learning process and integration of knowledge in the following study levels:

1. Knowledge of themselves and their relationship with society, family, community, society and the world. This knowledge includes knowledge of Thai history, society, and the political system of the country.

2. Knowledge and skills in science and technology including cognition and experience in management, maintenance and utilization of natural resources and environment with sustainably use.

3. Knowledge of religion, arts, culture, sports, Thai wisdom, and application of the wisdom.

4. Knowledge and skills in mathematics and languages especially Thai language.

5. Knowledge and skills in working and living happily.

No.24, To organize the learning process for educational institutions and related agencies, the following times must be considered.

1. Organize content and activities in accordance with student interests and aptitudes, taking into account the differences between individuals.
2. Practice the thinking process, management, confrontation and application of knowledge to prevent and solve problems.
3. Organize activities for learners to learn from real experiences, use analytical thinking, and promote passion in reading and acquiring knowledge.
4. Teaching and learning with the balance combination of the knowledge in various aspects. Moral, good values and expected outcomes should be promoted in every subject.
5. Encourage instructors to arrange the resources in learning, media, environment, and facilitate the learners in acquiring knowledge. Research can be used as part of the learning process. Teachers and learners may learn together from different types of learning materials. resources.
6. There should be coordination with parents, community and all stakeholders to develop the potential learners. Instruction and assessments should be reformed and implemented with learner-centered as stated in the objectives of The National Education Act in integrated learning management.

### **Advantages of Promoting Integrated Learning Management**

1. In actual life, a single science or disciplinary cannot be used in solving problem. Therefore, individual learners must use integrated learning management to bring skills and knowledge for solving real-life problems.
2. Integrated learning management brings together the ideas of the various disciplines, resulting in the transfer of learning. Learners would realize the advantages of learning and application in life.
3. Integrated learning management reduces the duplication of curriculum content and reducing the time spent in learning. As a result, there were more time available for new content.
4. Integrated learning management would respond to the learner's ability in forming knowledge and attitude of "Multiple intelligence".

5. Integrated learning management is aligned with knowledge forming theory by learners (Constructivism).

### **Characteristics of Integrated Learning Management**

Many educators have discussed the nature of integrated learning management as linking subjects or science together to create a deeper learning that is similar to real life.

1. Integration between knowledge and learning process. Nowadays, there is a great deal of knowledge for learning. Without modern learning methods, learning cannot be done at the right time. Therefore, new learning approaches are needed. Traditional learning which consisted of narration and memorization will result in the amount of knowledge or content, but not enough to learn process.

2. Integration between the development of knowledge and the mind. Appropriate learning process must focus on the attitudes, values, interests and aesthetics of learners in the pursuit of knowledge. This is a great way of learning.

3. Integration between knowledge and active learning should be promoted. Knowledge acquiring and problem solving tasks in real situations is one of the practical way of implementation.

4. There should be an integration between what is learned in school and everyday life. Learning must convey meaning and bring value to life of learners.

5. There must be an integration between subjects to achieve knowledge, and create good attitude of student's interest. Learning must truly reflect the value of the learner's life.

The research on analytical thinking ability and English proficiency of Maejo University students who enrolled in the course of English for agriculture focusing on The Philosophy of Sufficiency Economy creates a form of integrated learning management as a guideline for teaching and learning. Integrating The Philosophy of Sufficiency Economy with an English course is in accordance with the National Education Act BE 2542. It encourages learners to practice their thinking process, management, and application of knowledge to prevent and solve problems encountered by combining various knowledge, as well as moral, values, and expected learning outcomes.

#### **4. Concepts of learner centered in teaching and learning management**

In addition to the integrated teaching and learning, promoting learners through student-centered learning is another important concept to design the unit of study and the ability to analyze and use English of Maejo University students. English for agriculture was designed by emphasizing The Philosophy of Sufficiency Economy.

The concept of student-centered learning is based on the philosophy of Constructivism. Constructivism believes that learning is the internal process of learning. Learner is the creator of the knowledge by finding relation between what is found and the existing knowledge. The philosophy assumes that knowledge cannot be separated from curiosity. Knowledge comes from the creation to explain.

Constructivism encourages learners to create their own knowledge through self-reflection. Teachers cannot change the cognitive structure of learners. Teachers can help learners to change their cognitive structure by providing them with suitable learning environment. This is a new experience that is not consistent with previous experience. Learners try to update their existing experiences and create new knowledge.

#### **Concepts of learner centered in teaching and learning management**

The approach of learning management is focused on learners. It is a learning management that learners use the self-learning process and practice using the process of thinking professionally.

1. The process of thinking is a complete thinking process. From the beginning

1.1 Basic thinking or scientific processes include observation, classification, interpretation, prediction, data collection, conclusion, etc.

1.2 The level of thinking includes broad thinking, deep thinking, further thinking, analytical thinking, etc.

1.3 The process of thinking is critical thinking, problem solving, creative thinking process, and thinking as a research processes. Instructional methods used to teach learners are Guided Inquiry and Unguided Inquiry by using Mind Map and Concept Map,



2. Group process is a way for students to use the group to create knowledge by cooperating, coordinating ideas, working together, sharing responsibility, and achieving goals. Group work should be as effective with good leader, good members and good working processes. Teaching method should help learners to use both thinking process and the group process. The teaching methods could be group learning, group discussion, or collaborative learning.

1. Instructors manage and direct learning.
2. Instructors use process skill, thinking process and group process to help learners forming their own knowledge.
3. Instructors promote learners for authentic participation and Interaction in group working
4. Instructors must create happy learning atmosphere.
5. Instructors must use authentic assessment.
6. Instructors need to make application of knowledge to daily life
7. Facilitator is the role of teacher.

## **5. Authentic Assessment**

To assess learner development in the ability to analyze and the ability to use the language, authentic assessment is a process that helps to get information on performance of learners. This will explain both quantitative and qualitative learners. Authentic Assessment refers to the measurement and evaluation of the brain and mind processes in a straightforward manner based on what learners do by trying to answer how to do and what to do?

Authentic Assessment means the process of observation, record and collect data from the works or activities that students do. To judge the true ability of the learners using the 3 aspects: 1) Performance of Learning 2) Process of Learning 3) Product of Learning.

Authentic assessment covers the observation process, recording and gathering information from the work and how it is done without focusing on basic skills but focuses on assessing the complex thinking skills of the learner. The ability to solve

problems and expressions that result from working in real situations that focus on the learner is important, emphasizing the learner's discovery, knowledge and implementation to meet the needs of society. This will be assessed from the real situation continuously to obtain qualitative information that is beneficial to the instructor as a guideline to organize learning activities to suit each individual learner. This is different from the evaluation of general learning that measures the knowledge of the subject or the output and then ranked.

Authentic assessments will focus on assessing student development and learning effectiveness. The assessment will cover the real state and correspond to the learner's expression, process and output. It will be evaluated in terms of projects such as commentary, survey, exhibition with an integration of science, mathematics, linguistics, social sciences, humanities and the other professions. The authentic assessment could be as followed.

1. It is an assessment based on actual or real situations.
2. Assessment will be done alongside learning activities of learners in all situations.
3. Focus on the expressive behavior of the learners.
4. Focus on self-assessment of learners.
5. Focus on the participation of learners, instructors, parents.
6. There are a variety of uses, including a variety of tools. The data is collected during the operation in all aspects of the high-level thinking process, work process, problem solving, and evaluation process.
7. Encourage positive interaction, appreciation, and encouragement students to learn.

### **Evaluation of integrated learning management**

Integrated learning management is a learning management that is consistent with the learning management approach based on student-centered reform. The students learn from the idea and practice on their interest and aptitude individually or in group from a variety of learning sources using their own learning process and holistic learning. Therefore, the measurement and evaluation of the learning must be consistent with the

actual situation. That is to bring the essential aspects of authentic assessment into account as it is appropriate to integrate learning. Assessment covers following areas; planning process, working process, problem solving, using scientific principles, group working process, evaluation process, morality, ethics, intention, and attention to the assignment. Authentic assessment uses variety of method and assessment tools such as observation, using the checklist, using evaluation of work quality. The assessment will be conducted jointly by both instructors and learners. These results should be part of improving and developing learning activities.

From the guideline of the learning management focused on the students as mentioned above. Teachers need to focus on the self-learning process. Practice to use the thinking process, use the proper assessment of the situation. This can encourage students to form their own knowledge follow the purpose of learning.

## **6. Analytical Thinking**

Bloom cited in Angkana (1995) that analytical thinking was the ability to distinguish subsections of events, stories, or content in order to determine the components of importance, reason and principle. Dewey mentioned that thinking was the tool enhanced the ability, extended the vision, and controlled human actions, recognizing the choices and consequences that form conscious. Good said that analytical thinking was a thoughtful and good reference to the possible conclusion. It consisted of all the relevant elements and used the logical process properly.

From the above definition, it could be summarized that analytical thinking was the ability to search the facts, identify subsections of events or stories and group data to find the logical relationship between the elements of those data for true answer and reasonably conclusion.

### **Conceptual Theory of Analytical Thinking**

Thinking is a high potential process of human brain that makes humans different from other animals. From the past, human beings in each age tried to explain the process of thinking which was often hidden in the subject of learning. The study of past concepts, in addition to being an important basis for understanding new ideas, was also

a reflection of the wisdom of the past. It was extremely valuable to human learning, theories, principles and key concepts.

Bloom described the conceptual theory of analytical thinking as follows. The students would gain knowledge at any level depended on the matter of body of knowledge. For example, if the aim of learning was to present the economic data with graph information, other important knowledge such as interpretation, integration, synthesis, or evaluation should be taught as well to make students understand the information thoroughly. They may need to integrate knowledge in a variety of ways such as translation, interpretation, application, subsection analysis and finding relationships. This knowledge was to form knowledge, understanding, application, synthesis and evaluation on educational purpose. Especially the ability to analyze, students would be able to apply new creative situations as they develop their ability to reason. It was a persistent learning of the individual, even if not remember the full details of knowledge. Students needed to learn how to analyze under the conditions based on analytical capacity be used for periodic assessment that would lead to improvements in all three processes. The three processes were curriculum development, teaching, and learning management.

Bloom classifies the cognitive abilities of a person into six levels 1) basic knowledge about the subject; 2) understanding the facts; 3) bringing the facts to the solution or applying them to the problem 4) analysis of facts in different relations or situations 5) synthesis of new things or creation of new ideas based on facts. 6) evaluating the information. Students can participate planning in vision, mission, goals, decision-making, and problem-solving in all level. Students would be alert, gain more expertise and would be able to think at the higher level.

Bloom's analytical level was the basic thinking skills of students from basic to high-level thinking ability. Students would understand different situations through the analytical thinking process such as finding relation of issues or principles, making relationship analysis and analysis. Analytical thinking based on Cognitive Domain was divided into 6 levels 1) Memory 2) Comprehension 3) Application 4) Analysis 5) Synthesis 6) Evaluation.

## **Elements of Analytical Thinking**

Analytical thinking was necessary to instill in all the youth, especially the educational institutions that provide the basic education level should promote life learning for learners. Learners should have a chance to learn from environment, analyze, evaluate, and make decision for future to reduce the possible failure from the wrong decisions. The elements of analytical thinking were (Kriengsak, 2003).

1. The ability to interpret the contents. It was the ability to understand and give reasons from what being analyzed in order to interpret the content. Understanding of what was analyzed by the criteria that individuals used as a standard for decision making based on their knowledge, experience, values, and the ability to reasonably link.

2. Knowledge in contents. Analytical thinking based on basic understanding of the subject or content in a specific field because knowledge helped to define the scope of analysis, elements, sequence, and reasons. Therefore, analytical thinking was related to the subject as the thinking element.

3. Curiosity, Doubts, and Questioning, learners with analytical thinking ability needed to have these three components. These three components based on the principle of 5W 1H; Who, What, Where, and Why.

4. The ability to find a logical relationship. This was the ability to reason and distinguish what was true or false? What was the relationship details?

Analytical thinking in this way was a rational explanation of the relationship of things under reason, so it was similar with the principle of Sufficiency Economy. Integrating the Philosophy of Sufficiency Economy concepts with an English course would promote analytical thinking ability as well.

### **Analytical Thinking Ability**

Kriengsak Chareonwongsak, referring to Somsak Sintharavee (1997), mentioned that analytical thinking competence referred to the ability to investigate facts in order to find answers or practice behaviors that indicate knowledge and understanding in details by explaining, giving reasons, identifying ideas, relation and used as a basis for decision making. Similarly, Wanna Bunchim (1998) discussed that a person with analytical thinking ability was someone who could understand the meaning of the message or

stories that support arguments. It was based on logical reasoning, inference, and the application of reliable principles. These characteristics was expressed as behavior that indicated the ability to analyze the followings.

1. Be careful and systematic. The problem could be identified by identifying the top ideas and the cause of the problem.
2. Have the ability to read, describe problem, define problem, identify problem element, and identify assumptions with reasons.
3. Have the ability to identify key elements related to the problem or conceptual ideas primarily in problem solving.
4. Have the ability to explain complicated ideas in simple method. Able to use prior knowledge in solving the problems. Able to tell the reason why the problem or the idea is needed to be solved.
5. Have capability in separating elements of the problem. Able to offer possible solutions to the problem and be able set propriety in problem solving appropriately.
6. Have the ability to check, identify, and manipulate data with eagerness to seek answers and the meaning of things.
7. Have the ability to offer a variety of solutions.
8. Have patience and ability to seek a solution with carefulness.
9. Have ability to set criteria for problem selection and evaluation of achievement.

It can be concluded that a person with analytical ability must be well versed, seeking knowledge from various information timely, having a broad vision to use in decision making or problem solving by using reasons and evidence appropriately. Promotion of analytical ability should be encouraged with appropriate learner centered teaching and authentic assessment.

## **7. Content – Based Instruction**

From experience in teaching and observing instruction in the classroom, achievement in language learning will be most effective if teachers teaches learners to use the language in a situation that consistent with actual situation. Objective of language teaching is the ability in communication, teaching methodology should be

taught by focusing on the language use in real situations. Most language teachers in Thailand teach basic interpersonal communication skills, which emphasize the students' ability to practice the language in functions such as language patterns for shopping, asking directions, or self-introduction which are simple language function.

Many high school graduates will continue to study at higher levels. No matter if you study in any subject area, you will need Academic English to study and acquire knowledge for a specific purpose. Language teaching that emphasizes only the communication in everyday life cannot prepare learners for readiness in academic and further study.

Language teaching specialists has compared communicative language teaching and English for academic purposes. It was that concluded that learners can learn and use basic language communication after two years, but they cannot use language for academic purposes. (Grabe and Stoller, 1997, Cummins, 1983, 1989). If learners want to improve their Cognitive Academic Language Proficiency (CALP), it would take up to 7 years for learning (Cummins 1983,1989). Even though most learners do not live in an English-speaking environment, but students will have the opportunity to use academic English. For the above reasons, English as an academic should be taught with the emphasis on proper content leaded to language learning at an appropriate level.

Brinton, Snow, and Wesche (1989) provided a description of language teaching known as Content-Based Instruction (CBI). It is a teaching that synchronizes content with the purpose of teaching language for communication. The aim of this language teaching is to teach students how to use English as a tool to study content and to develop academic English. Teachers should train learners to understand the content and use language skills as a tool. The teacher will use the content in teaching form of the language, function of the language, and sub-skills that students need to know in order to understand the content and activities. Content-Based Instruction will allow teachers to create the lessons that best fit the actual situation. Teachers must understand integrated teaching or interpersonal skills as well as understand the content used in the particular course. (Brinton, Snow, Wesche, 1989).

For Content-Based Instruction, the teacher will coordinate the four skills with the topic. In selecting the subject, the teacher must ensure that the learner has necessary skills and learning strategies to understand the content. This language teaching is very

suitable and practical. This allows learners to understand the meaning of the language and can apply this strategy throughout. Contents and learning activities can be customized variously by teacher.

Teaching activities in Content-Based Instruction will encourage students to think through the practice of language skills. For example, when learners listen to or read an article from the authentic material, the learners not only understand the information, students will need to synthesize information. Therefore, learners would be able to practice their language skills and study skills for preparation of academic English in the future.

Content-Based Instruction aims to prepare learners to use English as the tool for gaining additional academic knowledge. The teaching and learning activities are not different from the Communicative Language Teaching. The main teaching and learning were as follows; Learner – Centered Approach, Whole Language Approach, Experiential Learning, Project – Based Learning.

It also emphasizes that learners can learn the language well if they have an opportunity to use the language in a realistic situation. And students will use more language if they are interested in the content. Therefore, teachers must bring authentic contents and realistic learning situations to the learners in order to understand the content. The learner can use his or her original knowledge in Thai to match the content of the course in English. And most importantly, this teaching style teaches students to think and criticize for information from the content. In addition, this teaching urges students to use language skills as a tool for further research. Therefore, this method is suitable for language teaching. For this reason, the teaching method should be applied to English for Agricultural course, which is based on an agricultural content integrated with the Philosophy of Sufficiency Economy to promote analytical thinking skills and English proficiency.

## **8. Maejo University Core Values**

Maejo University is an institution that produces graduates for country development with the foundation in Agriculture. At present, the university has expanded steadily, aiming to develop into an international level. More educational degrees and



disciplines have been developed to respond the needs of the society. New technology and innovation are applied and transferred to the university.

The university has set the core values of the institution, aimed at creating the following values; M (Mindfulness) Work with Heart and Soul, A (Aspiration) Carry on Unweaving Determination, E (Excellence) Weave Dreams into Mastery, J (Justification) Honor Justice, O (Originality) Lead with Creativity and Integrity.

To promote the cores values of the university, instruction in the university must build up the expected characteristics in learners through various activities or thinking processes. As in the course English for agriculture which focuses on the students' knowledge of agriculture along with communication skills, if the content is integrated with Sufficiency Economy which focuses on developing people based on moderation, reasonableness, and self-immunity, it will inevitably encourage students to have the appropriate attributes in accordance with the core values of the university as well.

### **English for Agriculture**

English for Agriculture is a core subject of Maejo Univesirty. The course is an English for specific purpose for students in the Faculty of Agricultural Production. The objective of the course was to develop English reading ability focusing on science and agricultural contents. The course details were as followed.

### **GE 243 English for Agriculture 3 Credits (2-2-5)**

Prerequisite: GE 142 Fundamental English 2

Students will study English vocabulary, expressions and grammatical structures specifically relevant to agricultural science. This course emphasizes particularly on developing reading skills.

(Lecture 2 hours, Practice 2 hours, Self-Study 5 hours/week)

The researcher wished to integrate The Philosophy of Sufficiency Economy with the course of English for Agriculture because the contents of course and the core values of the university were consistent with The Philosophy of Sufficiency Economy concepts. Analytical thinking was one of the core values that the university would like to promote in learners. For this reason, the integration of The Philosophy of Sufficiency

Economy into the course would promote analytical thinking ability and English proficiency of learners taking English for Agriculture.

## 9. Conceptual Framework

