

**A STUDY ON THE CO-PRODUCTION APPROACH TO THE
IMPLEMENTATION OF EDUCATION FOR SUSTAINABLE
DEVELOPMENT**



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entitled

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DEVELOPMENT**

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ABSTRACT

Education is one of the most important methods to build the Thai people's mindset toward Sustainable Development (SD). The co-production approach is a way of improving public services, including Education for Sustainable Development (ESD). The study employed qualitative research techniques and aimed to investigate the implementation and co-production of ESD. Moreover, it explored and synthesized the implementation characteristics of the co-production of ESD in Thailand. The research found twelve correlated indicators from the literature that link SD, ESD and co-production practices. They were categorized into input, process and output portions of the cycle of implementing and co-producing ESD. The indicators were examined within the context of the case studies of Bansankong School, Banthayae School and Bantungrakchaipat School. The researcher conducted in-depth interviews with stakeholders, who included representatives from the school administration, families and communities, local authorities, other relevant institutions and volunteers. The research showed that co-production happens at the individual and the more collective level in the case study schools. Most of them were the co-deliverers of professionally designed services or ESD. The results showed that factors in the process portion of the cycle of implementing and co-producing ESD tend to be more significant: these were cultural adaptation, community engagement, IT and media usage and the contingency approach. The factors in the input portion, namely interdependence, self-reliance and self-efficiency of the population and leadership, and the factor of mutual benefits in the output portion, also proved significant. In the third case, Bantungrakchaipat School, self-reliance and self-efficiency of the population is shifted into the output portion of the cycle. Meanwhile, the other five factors – democratic participation, equitability, goal of sustainable future, interdisciplinary approaches, and collaborative approach and partnership – appear to be non-significant.

KEY WORDS: EDUCATION POLICY / SD / ESD / CO-PRODUCTION

259 pages

การศึกษาแนวทางในการดำเนินนโยบายโดยการร่วมกันผลิตการศึกษาเพื่อการพัฒนาอย่างยั่งยืน

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บทคัดย่อ

การศึกษานี้เป็นวิธีการหนึ่งในการที่จะปลูกฝังจิตสำนึกของคนไทยในเรื่องการพัฒนาอย่างยั่งยืน การร่วมกันผลิตนั้นก็เป็นการที่จะพัฒนาการบริการสาธารณะซึ่งรวมถึงการจัดการศึกษาเพื่อการพัฒนาอย่างยั่งยืน(ESD) งานวิจัยนี้เป็นงานวิจัยเชิงคุณภาพซึ่งมีวัตถุประสงค์ในการศึกษาและสังเคราะห์ลักษณะการร่วมกันผลิตการศึกษาเพื่อการพัฒนาอย่างยั่งยืน(ESD)ในประเทศไทย จากการสังเคราะห์วรรณกรรมในเรื่องการพัฒนาอย่างยั่งยืน (SD), การศึกษาเพื่อการพัฒนาอย่างยั่งยืน(ESD)และการร่วมกันผลิตพบตัวบ่งชี้ 12 ประการที่เกี่ยวข้องกับประเด็นการวิจัย ผู้วิจัยได้จำแนกตัวบ่งชี้เหล่านี้ออกเป็นตามวงจรการนำนโยบายไปปฏิบัติและการร่วมกันผลิต โดยจำแนกเป็น ปัจจัยนำเข้า(Input), กระบวนการ (Process) และปัจจัยนำออก (Output) หลังจากนั้นได้ศึกษาตัวบ่งชี้เหล่านี้โดยทำวิจัยโดยใช้พหุกรณีศึกษา ได้แก่ โรงเรียนบ้านสันทอง, โรงเรียนบ้านท่าแขกและโรงเรียนบ้านทุ่งรังษย์พัฒนา ผู้วิจัยได้ทำการสัมภาษณ์ผู้มีส่วนเกี่ยวข้องกับการนำนโยบายไปปฏิบัติและการร่วมกันผลิตการศึกษาเพื่อการพัฒนาอย่างยั่งยืน(ESD) ได้แก่ ตัวแทนผู้บริหารโรงเรียน ตัวแทนจากครอบครัวและชุมชน ตัวแทนจากสถาบันต่างๆและอาสาสมัคร การวิจัยแสดงผลว่าการร่วมกันผลิตนั้นเกิดขึ้นในระดับปัจเจกและระดับกลุ่มในโรงเรียนกรณีศึกษา ผู้ร่วมผลิตปรากฏเป็นผู้ที่ร่วมให้บริการสาธารณะที่มีการออกแบบโดยผู้ให้บริการสาธารณะ(โรงเรียน) ผลการวิจัยยังแสดงผลว่าตัวบ่งชี้ที่อยู่ในส่วนกระบวนการ (Process) ในวงจรการนำนโยบายไปปฏิบัติและการร่วมกันผลิตการพัฒนาอย่างยั่งยืน(ESD) ได้แก่ การปรับให้เข้ากับวัฒนธรรม, การมีส่วนร่วมของชุมชน, การใช้เทคโนโลยีและสื่อและการบริหารเชิงสถานการณ์ (ภาวะผู้นำ) มีนัยสำคัญสูงสุด ตัวบ่งชี้ในปัจจัยนำเข้า(Input) ได้แก่ การพึ่งพาซึ่งกันและกัน, การเป็นประชากรที่มีประสิทธิภาพและพึ่งพาตนเอง, และภาวะผู้นำ และตัวบ่งชี้ในปัจจัยนำออก (Output) ได้แก่ การมีผลประโยชน์ต่างตอบแทนปรากฏว่ามีความสำคัญ ในกรณีศึกษาโรงเรียนทุ่งรังษย์พัฒนา ผลการวิจัยแสดงตัวบ่งชี้เรื่องการเป็นประชากรที่มีประสิทธิภาพและการพึ่งพาตนเองได้เป็นตัวบ่งชี้ในปัจจัยนำออก (Output) ซึ่งต่างจากกรณีศึกษาอื่นๆ ตัวบ่งชี้ที่เหลือได้แก่ การมีส่วนร่วมแบบประชาธิปไตย, ความเท่าเทียม, เป้าหมายเรื่องความยั่งยืน, ความเป็นหุ้นส่วนและความร่วมมือและการใช้สหวิทยาการไม่ปรากฏนัยสำคัญ

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CHAPTER I

INTRODUCTION

1.1 Background and rationale

The limits to continued economic growth have been a major concern of the international community since the 1970s. Large-scale environmental degradation, irreversible loss of natural resources, social injustice between and within societies, rapid depletion of individual energy sources, and even dramatic changes to the Earth's climate are examples of obstacles to economic growth. This infers that the current development patterns cannot be sustained from economic, social and ecological points of view.

It is vital to urge people to realize the fact about our environment that is not easily replaceable and the importance of sustainability. Many kinds of cooperation are required. The World Commission on Environment and Development (WCED) has been working for Sustainable Development and Sustainability and put these concepts onto the international agenda in the mid-1980s. This was the mission of the Brundtland Commission, convened by the United Nations (UN) in 1983. Subsequently, the UN Conference on Environment and Development (UNCED), more commonly known as the Rio Summit or the Earth Summit, was arranged in Rio de Janeiro in 1992. Its main points of discussion ranged from defining the concept to formulating policies through policy principles so that sustainability would be achieved worldwide. The Rio Declaration expressed twenty-seven policy principles to guide governments' interpretation of Sustainable Development (SD) and their design and implementation of sustainable development policies (UNCED, 1992). Five essential sustainable development principles were highlighted: horizontal and vertical policy integration, equity, intergenerational solidarity, internationalization of social and environment costs, and participatory policy-making. From the Rio summit, SD policies have been underlined worldwide and have been integrated into local policies and implementation. The goal of achieving a sustainable future is now a common objective for everyone.

Thailand is a good example of a developing country which is struggling with globally common problems in trying to find solutions for sustainable development. For example, Thai citizens suffered in the financial crisis in 1997-1998, known as the “*Tom Yum Goong* crisis”, and the country was affected by several natural disasters. The tsunami in 2004 and numerous floods, especially the 2011 flood, are examples of factors that have hindered Thailand’s national development in terms of social, economic and environment aspects. Thailand needs to find a solution and a way to support development in a sustainable manner.

Education is considered an important factor that stimulates development, because human resources represent a key driver and a precious resource. Human resources are always the mechanism to push forward any projects. When a country’s human resources are well managed, human capital is formed. In the same way, in Sustainable Development, human resources are vital to every development process. This raises the importance of the study of human capital and the human learning process to create sustainability. The terms "Sustainability" and "Education for Sustainable Development" need to be clarified. People are apt to blindly revere economic development; however, development in other aspects seems to be ignored. This gap is considered to be an important point for the current research, which seeks to emphasise the importance of sustainable development (SD) to Thailand. The researcher asserts that ESD may be the key.

ESD is a key element of SD. According to UNESCO, ESD is a "dynamic concept that encompasses a new vision of education that seeks to empower people of all ages to assume responsibility for creating and enjoying a sustainable future" (UNESCO, 2002, p. 1). The overall objective of ESD is to allow citizens to act for positive environmental and social change. It implies a participatory and action-oriented approach. It is a challenge for Thai education authorities to commit to such duties. The key point to be discussed is how to empower Thai citizens to acknowledge their responsibility to society and nature.

According to the Office of Non-Formal and Informal Education (ONIE, n.d.), the problems and obstacles faced by Thai education are lack of opportunity for some target groups, economic disparity, and distribution of people’s income and the expansion of educational opportunities. Moreover, as a result of national unification

policies, the diffusion of public education is an issue. In every area of Thailand's education service, the standard Thai curriculum is taught by Thai teachers. Although Thai education is indispensable for earning a living in Thailand, it ignores the local and traditional customs and has thus created a gap between generations. Local traditions and customs are being lost and the number of children who are isolated from their traditional heritage is growing (Tahami, 2009). That is the reason why the main focus of the present research is on ESD and on seeking ways to reduce the obstacles in the provision of Thai education.

The research focuses on service provision and co-production of ESD in the Basic Education unit under the Office of the Basic Education Commission (OBEC) in Thailand, which provides access to education for everyone. It seeks to reinforce the importance of education reformation and to investigate the importance of civic participation. In addition, it attempts to strengthen participatory policy-making and ESD policy implementation for sustainable development by means of a co-production approach.

Although ESD and co-production are discussed in different places, different time and different areas, they seem to have some linkages. For example, ESD mentions community engagement in a few stages in the policy cycle, and co-production also encourages community involvement in co-producing public services. In the research, the author investigates whether ESD and Co-Production concepts share some common ground. Furthermore, it examines whether the co-production approach can reinforce ESD and can accomplish ESD tasks to create a sustainable future.

The research makes use of multiple case studies to examine in depth the phenomena of implementation and co-production of ESD in Thailand. The three case studies are as follows:

First, Bansankong School, Chiang Rai province, is an interesting case to study the implementation and co-production of ESD because it is one of the pilot models for practicing ESD activities in schools. Moreover, the community is strong and shows cultural diversity. The co-production of the education service by other stakeholders is evident. The school introduces the case study approach (CSA) to study

community problems in order to create higher-order thinking skills among the students.

Secondly, Banthayae School, Kanchanaburi Province, is selected because its co-production and civic participation in the education service are very significant. The school adopts a Sufficiency Economy and a Buddy system to build the students' life skills. Because of the economic problems in the community and in the school, the school once struggled to survive and to maintain its quality. The application of special methods, together with the inputs from special features of the community, has helped the school to resolve these problems.

Finally, Bantungrakchaipat School, Phang Nga province, is another useful case to investigate because the school has many interesting stakeholders co-producing its education services. Outstandingly, NGO and private sectors are involved in this school's service provision. It presents another model of the provision and co-production of service. These three cases share one common attribute: they are all under the OBEC, where everybody can assess basic education. The research examines the implementation and co-production of ESD in the three cases, using a qualitative method to cross-check how the contributing factors function in these cases.

1.2 Research questions

The research is designed to explore the implementation of ESD policy in Thailand, with an emphasis on the implementation of co-production of ESD policy in the basic education sector. In other words, this research focuses on examining the important factors contributing to the co-production of ESD policy in Thailand. The argument is whether co-production could either strengthen ESD policy and educational public service from the government or could be an important part of ESD policy implementation.

1.3 Objectives

The objectives to study the implementation and co-production of ESD in Thailand are:

1.3.1 To examine the current state of ESD and co-production of ESD in Thailand.

1.3.2 To examine the indicators or factors in the cycle of implementation and co-production of ESD, namely the input, process and output of ESD and the co-production of ESD in Thailand.

1.4 Scope of study

1.4.1 Scope of Area

This multi-case study examines three schools in which there is co-production of the education service. The author has selected these three schools according to the criteria designed to choose the most suitable representatives of service provision with civic co-production of education. It seeks to study co-production in light of UNESCO's policy in each school and its community.

1.4.2 Scope of theories

The exploration concentrates on essential and optional information with respect to the study's hypotheses: definitions of SD, ESD and Co-Production and their characteristics. The materials used include course books, articles, reports, official rundowns, research, media communications, videos and websites, which are used to comprehend the ideas of SD, ESD and co-production. Additionally, the current situations regarding the United Nations' Sustainable Development Goals or SDGs and UNESCO's ESD approach in worldwide and neighbourhood settings are considered and the essential data are collected. A meta-synthesis of the literature allows synthesized keys of the concepts to be used for the development of a conceptual framework and research tools for use in further research steps.

1.4.3 Conceptual framework

The conceptual framework is summarised in the figure below (Figure 1.1); however, it will be discussed in detail in Chapter III. The principal step is Document Research. In this process, the research collects and studies essential information to clarify the definitions and characteristics of SD, ESD, and Co-Production. Additionally, current phenomena concerning the United Nations' SDGs and UNESCO's ESD policy in worldwide and neighbourhood settings are considered. The findings reveal some common ground among the three ideas.

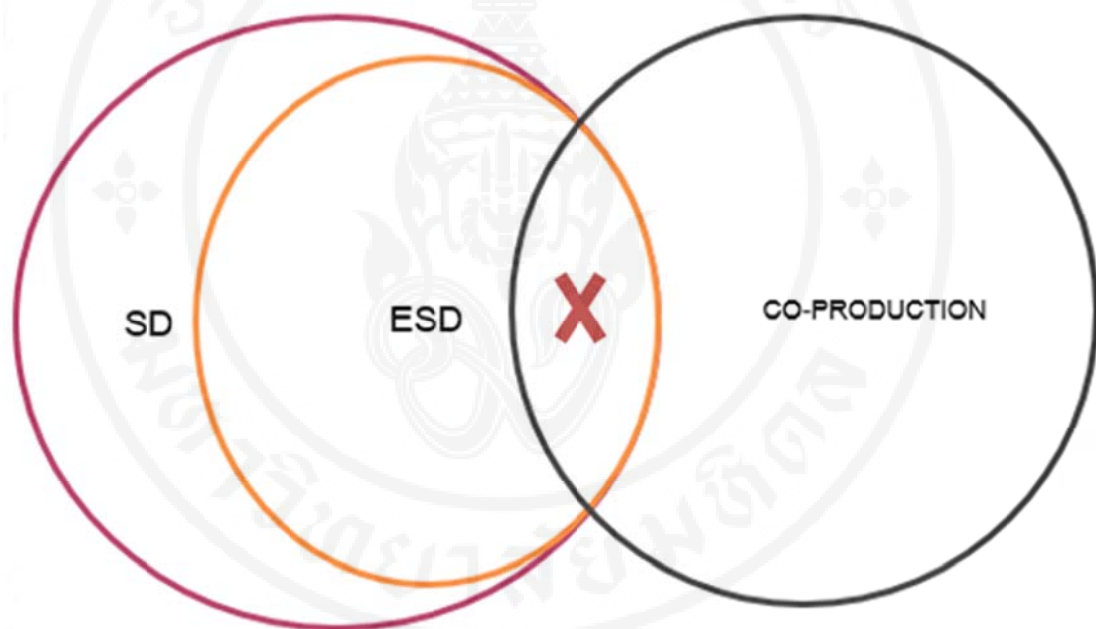


Figure 1.1 Linkage of SD, ESD and Co-Production (Author's figure)

The second step is field research. In this step, the multi-case study presents three schools and their communities in Thailand. The selection of the cases is based on a number of criteria: the schools must have SD, ESD and Co-production characteristics. The aim of this phase of the study is to study the models of co-production of the ESD course of action in each school and its environment. The research utilizes secondary sources, non-participatory observation and in-depth interviews based on research tools such as observation forms and interview guidelines.

The twelve linkages of SD, ESD and Co-Production theories, as displayed in the central box below (Figure 2.2), are developed into the significant indicators used

to explore the multi-case study. The thesis asserts that these correlated indicators share common attributes but that they are different. Some can be put into the input phase of the implementation cycle; however, some should be considered as part of the process phase of this cycle, and others as output from the cycle. Therefore, key characteristics listed in the literature may be categorized into graph form, namely input, process and output, as shown in the conceptual framework below. The research studies how these keywords have impact on the co-production model of ESD policy implementation in the schools. The conceptual framework below is utilized as a guideline to study the process of implementing ESD policy in the case study schools:

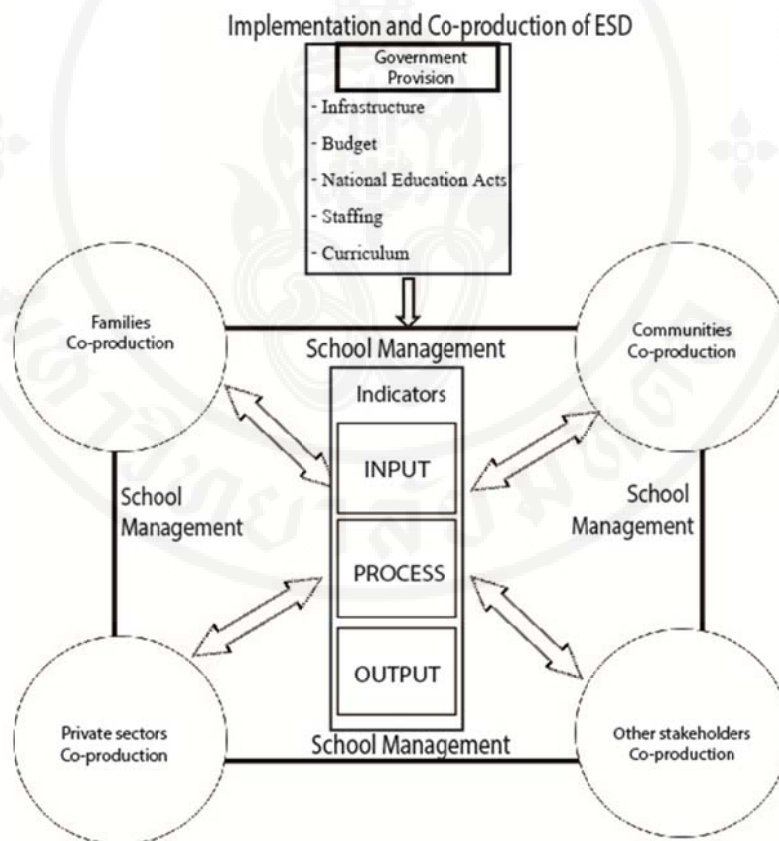


Figure 1.2 Conceptual Framework (Author’s figure)

The third step is data analysis and model development. Qualitative content analysis and descriptive qualitative methods are used, with the help of NVIVO software 11 in coding and rearranging the qualitative data. A model of the implementation of ESD policy in Thailand is then created.

1.5 Results and contributions

1.5.1 To provide a study of the current and co-production of ESD in Thailand

1.5.2 To provide implementation models of the co-production of ESD and to introduce policy suggestions concerning the policy for ESD co-production in Thailand.

1.6 Definitions used in the thesis

1.6.1 Education for Sustainable Development or ESD is the action that incorporates key SD issues into teaching and learning. These topics concern climate change, disaster risk reduction, biodiversity, poverty reduction, and sustainable consumption. ESD also requires participatory teaching and learning methods that motivate and empower learners to change their behaviour and take action for sustainable development.

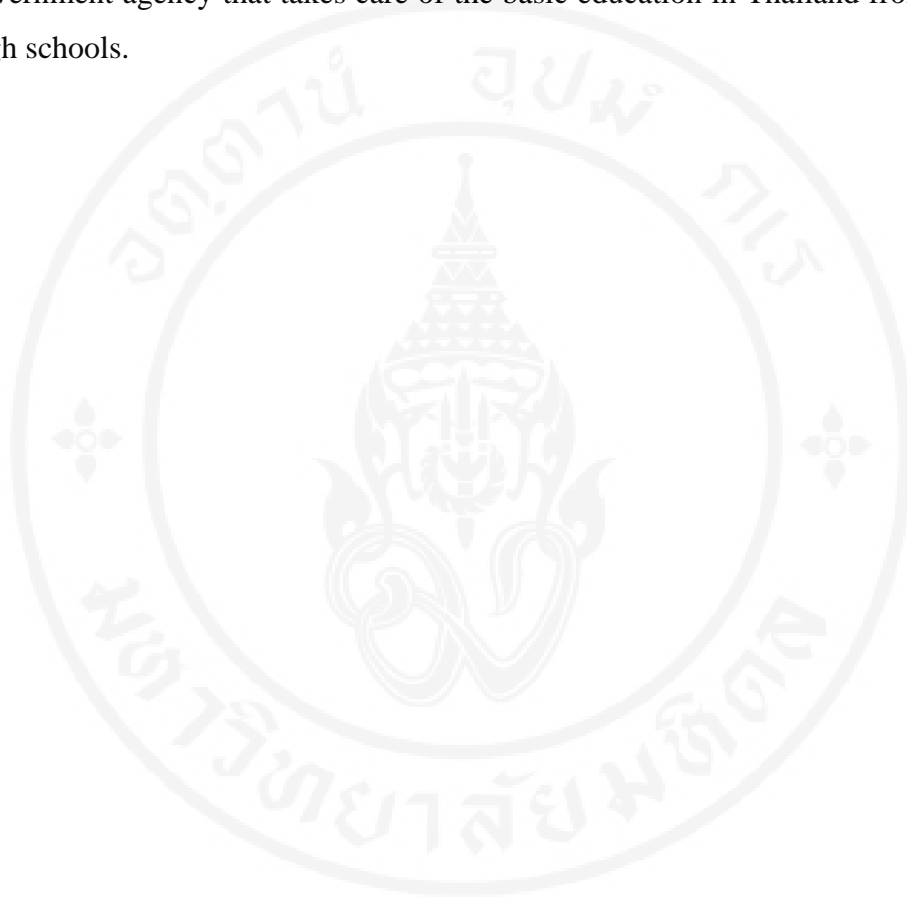
1.6.2 Sustainable development or SD is the concept of how to maintain the human-made or natural productivities which are endangered, at risk of extinction or are insufficient for human needs. According to the Brundtland report (1987, p. 16), sustainable development means “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.

1.6.3 Co-production is the action of delivering public services in an equal and reciprocal relationship between professionals, public service users, their families and their neighbours. Both services and neighbourhoods became far more active agents of change. Co-production is a challenge to improve the service provision from the government.

1.6.4 Sustainable Development Goals (SDGs) are a proposed set of targets relating to future international development. They replaced the MDGs when they expired at the end of 2015. The SDGs were first formally debated at the United

Nations Conference on Sustainable Development held in Rio de Janeiro in June 2012
(Rio+20)

1.6.5 The Office of the Basic Education Commission (OBEC) is a government agency that takes care of the basic education in Thailand from primary to high schools.



CHAPTER II

LITERATURE REVIEW

2.1 Public Policy Theory

2.1.1 Definition of Public Policy

2.1.2 Policy Science and Policy Cycle

2.1.3 Education policy and its policy process

2.2 Education for sustainable development (ESD) and its history

2.2.1 Sustainability and Sustainable development: background, concepts and the definition.

2.2.2 Thailand National development plans: a good start on Sustainable development policies in Thailand

2.2.3 The Emergence of ESD

2.2.4 Past research regarding ESD

2.3 Co-production Theory

2.3.1 Definition of Co-Production.

2.3.2 Past research regarding Co-Production

2.4 Synthesis of Linkages between SD, ESD and Co-Production

2.1 Public Policy

2.1.1 Definition of Public Policy

Many theorists define “Policy” and “Public Policy” in several ways, depending on their objectives and on the direction of study and analysis. For example, Dye (2004, P. 34) described Public Policy as what a government has chosen to practice or not to practice. While, Anderson (1979, P.18) states that the public policy is a moving direction and is set up to solve problems. In addition, Lasswell and Kaplan (Lasswell & Kaplan, 1970, p. 71) define public policy as “a project or programs of

goals, values, and practices.” Easton (1960, P.45) defines "Policy" as the authoritative allocation of values for the benefit of the public as a whole. The stable distribution of values means "what to follow strictly, or else it is considered illegal". The government carefully selects or prohibits actions due to their values or beliefs. However, the objective is to protect the public interests. According to Easton, government policy describes the values and behaviour that the government assigns. Therefore, we can synthesize the new definition of Public Policy as what a government chooses to practice or not to practice. It is an executive program of goals, values and practices, which is set up to solve a particular problem.

For further explanation, according to Anderson (2003), there are several implications of this concept of public policy. It refers to a purposive course of action undertaken by a government in dealing with certain problems or matters of concern. Firstly, public policies are purposive or goal-oriented actions rather than random behaviours or chance occurrences. Secondly, they can be courses or patterns of measures taken over time by governmental authorities rather than separate and distinct decisions. Thirdly, they are in response to policy demands and involve other actors, such as individuals, groups of citizens, groups of representatives, or legislators and other public officials, in action or inaction on certain public issues. Fourthly, they represent what governments do, not just what they intend to do or what officials say they are going to do. Finally, they are probably either positive or negative.

First, the definition connects policy to purposive or goal-oriented action rather than to random behaviour or chance occurrences. Public policies in modern political systems are instead planned to achieve specified goals or produce meaningful results, although they do not always accomplish these goals. Proposed policies may concern hypotheses suggesting that specific actions might be taken to achieve particular goals. The objectives of a policy may be loosely defined and ambiguous in content. Therefore, it gives directions rather than precise targets for its implementation. Ambiguity in language can then become negative or positive. Positively, it can be a means for softening conflict, albeit temporarily. Compromise to secure agreement and build support may subsequently be made to clarify the statement of policy goals.

Public Policies are comprised of courses or patterns of action taken over time by governmental officials rather than their separate, discrete decisions. Public policies emerge in response to policy demands, or to claims for action or inaction on some general issue made by other actors. Moreover, policy statements are usually formal expressions or articulations of public policy. For example, they can be legislative statutes, executive orders and decrees, administrative rules and regulations, or court opinions. Moreover, they can be statements and speeches by public officials, which indicate the government's intentions and goals and the government's methods to realize them.

Policy concerns what governments do, not just what they intend to do or what officials say they are going to do. The concept of policy output can be seen as the action taken in pursuance of policy decisions and statements. Finally, a public policy may be either positive or negative. Positively, some forms of governmental action may deal with a problem on which action is demanded. On the other hand, administrative officials may decide to do nothing about some matter on which government involvement was sought. Public policy, at least in its definite form, is based on law and is authoritative. Members of a society usually accept and comply with public policy, and those who do not run the risk of penalties such as fines, jail sentences, or other legally imposed sanctions or disabilities. Therefore, public policy has an authoritative, legally coercive quality that the policies of private bodies do not have. The main characteristic that distinguishes government from private organizations is its monopoly over the legitimate use of coercion. Private organizations cannot legally incarcerate people, but public policy can.

In summary, Public Policy can be concluded as displayed in the following figure (Figure 2.1):

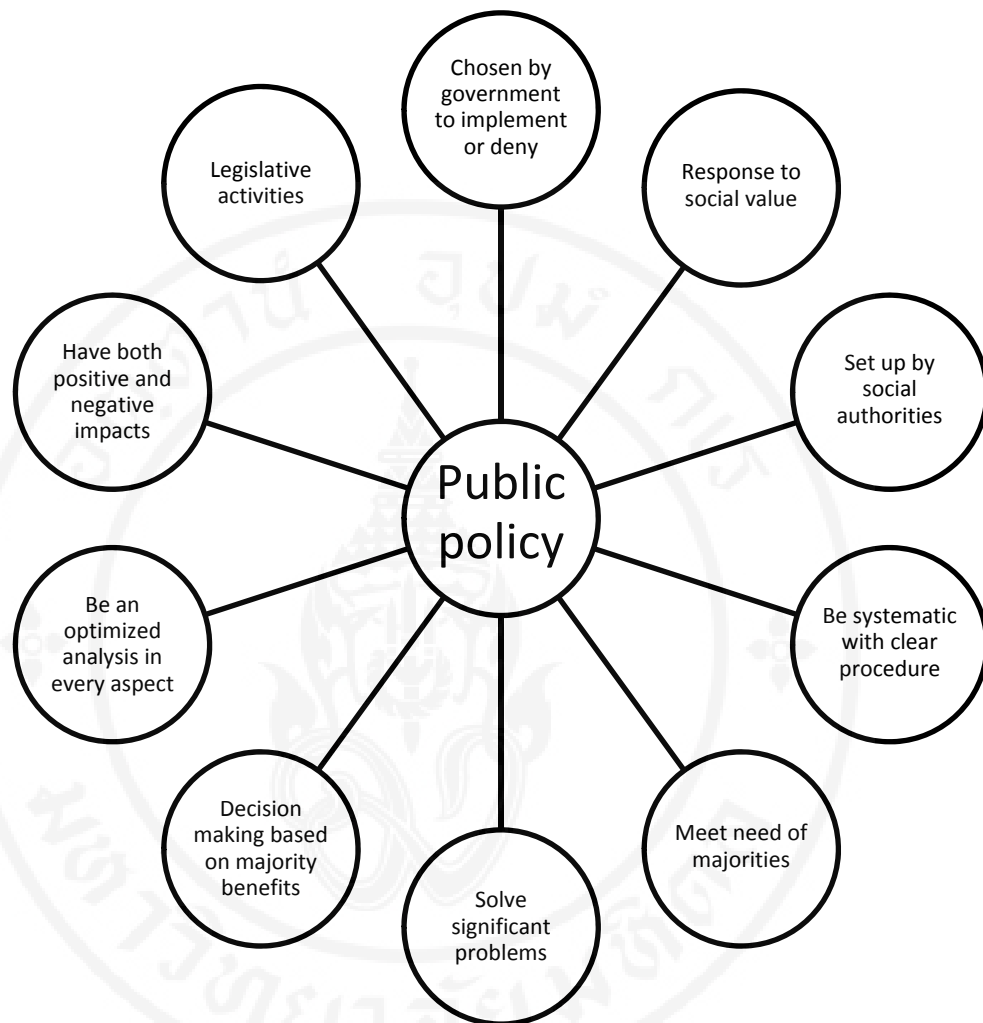


Figure 2.1 Attributes of Public Policy (Author’s figure)

2.1.1.1 Education Policy is a government activity in the realm of the public administration. Education policy comprises the principles and government policy-making in the educational sphere, as well as the collection of laws and regulations that rule the operation of education systems. Education occurs in many forms for many purposes through many institutions or non-institutions. Education can be formal, informal or non-formal. The government basically sets education policy as its first priority because it meets the needs of the majority in a country, solves significant problems and is based on the majority benefits.

Several peripheral issues are subject to debate in education policy, specifically in the field of schools. They consist of discussions regarding school and class size, as well as numerous other issues, such as school management, teacher education, certification, and training, teaching methods and pedagogy, curricular content and setting, graduation requirements and investment in school infrastructure. When researchers study an education policy, it is necessary to take the public policy into account, together with any other educational aspects. Policy science and the policy cycle is the next step in exploring the policy.

2.1.2 Policy Science and Policy Cycle

Lasswell and Kaplan (1970, p. 24-25) initiated the study of so-called "Policy Science" many decades ago. They defined the term 'policy' by integrating the idea of Abraham Kaplan as "the policy means the settled project or plan that is performed by target, value and process." This definition shows that public policy is an inaction but its influences or impact correlates to the first selection, and it can also be a public policy.

In Policy Science, the policy cycle has been developed as a tool for studying policy. It is used for the analysis of the development of policy. It can also be referred to as a stages heuristic or stages approach (Nakamura, 1987). Various previous researchers, such as Perathon Boonyaratapan (2005), Supachai Yavaprabhas (2005), Brain and Lewis (1984), Lindblom and Woodhouse (1993), and Thomas R. Dye (2011), have studied the policy cycle and introduced different cycles of policy research. However, in this study, it is synthesized into policy problem, policy formation, policy formulation, policy implementation, policy outcome, policy evaluation, and policy feedback. These elements can be considered and grouped into three phrases: Policy Formulation or the establishment stage, Policy Implementation, and Policy Monitoring, or the stage of policy output and evaluation.

2.1.2.1 Establishment of policy

Perathon Bunyarattanapan (2005) mentions that within the policy cycle, the starting point of a policy is when a problem is noticed. This stage is called "Policy Formation." The continued consideration regarding the methodology to

solve and relieve problems is called "Policy Formulation." Afterwards, a "Policy Decision" is made upon the review of the possible solutions to the problem. Several methods may be used here. Then the final decision to act must be made. After the "Policy Decision" step, the next step is "Policy Implementation". Lastly, after this implementation, performance evaluation is carried out, as shown in Figure 2.2:

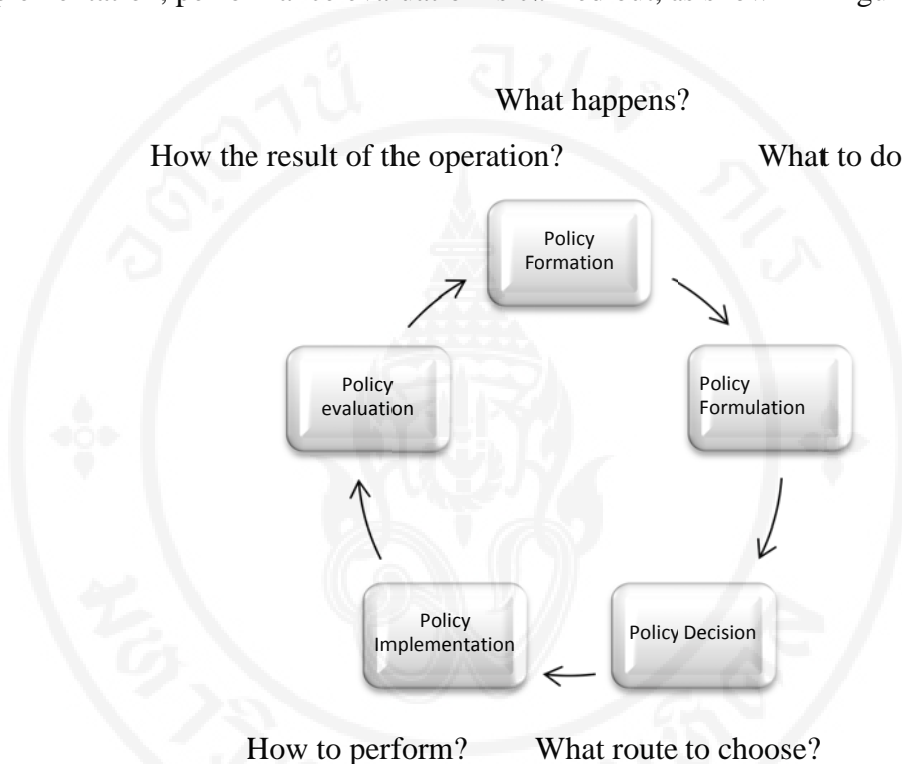


Figure 2.2 Establishment of Policy (Perathorn Bunyarattanapan, 2005)

Policy formation

To be more precise, "Policy Formation" is the first stage of the cycle. A policy science scholar, Jones (1984, cited in Nattha Winichnaipak, 2011) highlights six key points about policy formation. Firstly, it is not necessary to have only one actor on the stage. A few more actors can give more active contributions in discussing the problem. Secondly, even if the problem is not yet clearly identified, the process of policy formation can still proceed. Thirdly, it is not necessarily an authority or government body that formulates the policy. However, this usually happens in government activities. Fourthly, policy formulation may take a long time, even though there is no support for any alternatives. Fifthly, sometimes the loser in agenda setting has introduced more interesting issues. Finally, in agenda setting, some people lose

and some people win, and policies themselves give no neutral effect. There are few compromises.

Policy formation, therefore, is a cognitive process where a problem in society is recognized. Then the problem is selected as an agenda to be discussed to create an alternative to systematically solve the problem. The first step is to define what the problem is.

a) Policy Problems

Why are some issues acted on and others neglected? Why are problems identified in one way and not another? These questions are usually raised when we come across the stage of problem identification.

Policy problems can be inferred to be a condition or situation that produces needs or dissatisfaction among people, who then desire government action. Problems are defined by their objective dimensions and by their social constructs. Therefore, definitions change over time as values and conditions change. This depends on how the society evaluates the issue under consideration. Moreover, it is necessary to determine the cause of the problem. Otherwise, remedies can be misguided. Finally, the issue of tractability concerns how difficult the problem will be to fix. All these accounts should be considered when discussing policy problems.

b) The Policy Agenda

Due to limited time and resources, policy-makers must select which problems to act on (Anderson, n.d.). These problems are then converted into issues or matters requiring government attention. There are two agendas: the systemic agenda and the institutional agenda. Firstly, the systemic agenda (or informal public agenda) refers to the informal discussion of problems by members of a political community. Afterwards, the problems are pursued to set an agenda for government agents to be brought to another process of public policy formulation. Though determining what is on the agenda can be complicated, some clues can be witnessed in presidential addresses and issues discussed in the media. Secondly, the

Institutional agenda is the program that the authorities or government choose to include on the agenda in order to formulate public policy.

c) The Agenda-Setting Process

Kingdon (1995) mentions that three mostly independent streams, which comprise problems, proposals, and politics, occasionally come together. This opens a "policy window" that allows the issue to come onto the agenda. The problem can be noted from an event or crisis where a signal of the emergence of such problem is showed and government attention is required. Later, government action is necessary to create a suitable remedy to the problems.

Second, legislative agendas and alternatives might be a process of gradual accumulation of knowledge and perspectives among experts in the policy area to generate a policy proposal. Ideas such as equity or efficiency are taken into account. Proposals show the process by which policy proposals are formulated, debated, revised, and adopted for serious consideration.

Finally, political factors influence agendas, such as changes in elected officials, political climate or mood (e.g., conservative, tax-averse), and the voices of advocacy or opposition groups.

2.1.2.2 Policy Formulation

In the path of their daily lives, people are affected, directly and indirectly, obviously and subtly, by an extensive range of public policies. Public policies are indeed pervasive in a modern and complex society. They have advantages and disadvantages, cause pleasure, irritation, and pain, and collectively have significant effects on our well-being and happiness. They constitute a large portion of our environment, which is the concern of modern society. Public policies, including how they are formed, budgeted, implemented, and evaluated, are important for people to learn about. There are also scientific, professional, and political features of studying public policies and policymaking.

a) Policy-Makers

Typically, public policies are developed by governmental bodies and officials; however, in many cases, non-government actors and factors may undoubtedly influence public-policy development. The particular characteristics of public policies come from the creations of authorities in a political system. The authorities can be executives, legislators, judges, administrators, councillors, etc. In short, public policies are those made by government officials and agencies. Also, they affect substantial numbers of people (Anderson, 2013).

b) Decision-Making

Several theoretical approaches are available to the study of public policy. It is necessary to clarify the distinction between policy-making and decision-making. Decision-making involves making a discrete choice from among two or more alternatives. Theories of decision-making deal with the criteria and processes used in making such alternatives. A policy, as mentioned earlier, is "a relatively steady, purposive course of action followed by an actor or set of actors in dealing with a problem or matter of concern." Policymaking, therefore, typically contains a flow and pattern of action that continues over time and involves many decisions. Some are routine, but some are less so. A policy is synonymous with a single decision.

In this research, Rational Choice theory, the Incremental Approach, and system theory will be discussed:

i) Rational Choice Theory

The rational-choice theory, which is sometimes called social choice, public choice, or formal theory, was generated by economists. It involves adopting the regulations of microeconomic theory for the analysis and explanation of political behaviour. It has now gained many supporters among political scientists.

The earliest use of rational-choice theory to study the political process is probably Anthony Downs's Economic Theory of Democracy. It is called 'rational' because rational decision-makers seek to

maximize attainment of their preferences. Parties formulate whatever policies would win most votes for them, and voters try to optimize their preferences. To win elections, political parties work hard to appeal to the greatest number of electors and maximize their voting support, rather than providing citizens with meaningful alternatives. Political actors, like economic actors, act rationally in pursuing their self-interest. Therefore, economist James Buchanan, a leading proponent of rational-choice theory, argues that politicians are led by their self-interest rather than by an altruistic responsibility to goals; that is, statesmanship or the national interest (Anderson, 2003).

Another key aspect of rational-choice theory is its methodological individualism. The primary unit of analysis and theory is the individual decision-maker. The individual's values are assumed to be more important than other values: collective, organizational, or social.

Some rational-choice theorists have explored the effects of incomplete or imperfect information and uncertainty on policymaking. Political decision-makers are probably possessed of differing amounts of information. This condition is called information asymmetry. They are uncertain about the outcomes or consequences of laws and policies when they are implemented. Conceivably, this information asymmetry would allow committee members to act strategically and secure the enactment of policies that are of benefit primarily to themselves.

ii) Herbert A. Simon's view of rationality

Herbert A. Simon, a well-known American political scientist, economist, and professor, studies the behavioural and cognitive processes involved in making rational human choices. Simon's paradigm shows that the basic unit of economic analysis is the decision-making process. Simon (1960) tries to develop a model of decision-making based on the actual behaviour of decision-makers. Later, his approach came to be regarded as the bureaucratic or administrative model. He recognized that a human being has a limited capacity for processing information. Thus, there are cognitive or mental limits to human rationality. These boundaries or constraints on individuals mean that decision-making

is governed by external factors. On this basis, bounded rationality is introduced. Furthermore, perfect information is not always available, and there are time and cost considerations attached to information gathering and evaluation (Williamson, 1975). In conclusion, Bounded Rationality is the notion that in decision-making, the rationality of individuals is limited due to the information they have, the cognitive limitations of their minds, and the specific amount of time they have to make decisions. Concerning Public Administration, Simon's rationality has become an alternative basis for scholars and practitioners in studying the decision-making process.

iii) Incrementalism

Charles E. Lindblom, in his article "The Science of Muddling Through" (1959, cited in Shafritz & Hyde, 2012), believes that scientific analysis can solve the political problems faced by the public administration. In his article, Lindblom essentially says that a rational approach is not possible, and he offers an alternative: that is, the "incremental approach." According to him, Rationalism is considered as the "root" method; meanwhile, incrementalism is specified as the "Branch" method.

The root method emphasizes the specification of all ends. In this sense, "ends" mean "goals" to be pursued. Furthermore, it mentions the specification of weights for all the ends. In other words, it indicates how important the various goals are in relation to each other. It also examines all possible sets of means, or even all right sets of means. Evaluation of means is also necessary. Sets of means should be evaluated against ends, assigning a score to how well the given set of means achieves each end. For each set of means, the practitioner should calculate its overall measure. The calculation can be based on the weighted average of its scores on achieving the different ends. The series of means with the highest weighted score should be chosen. These criteria are the characteristics of the rational-comprehensive method, which is the direct opposite of the means-end relationship or "incremental method".

Ends and means are intimately interwoven. Only after finding means can we know our ends. Only a few means are

found, on the assumption that managers have limited time and other resources to consider. For that reason, they cannot perform a comprehensive analysis. Means tend not to represent too much of a departure from the status quo. The evaluation of the means is crude, in that many consequences are ignored. Moreover, a choice among the means is determined by agreement between interested parties rather than by summarized indicators arising from the analysis. An agreement is the only empirical indicator of virtue because values are not usually clear-cut or even shared.

The system suggested in Lindblom's work "The Science of Muddling Through" presents an approach to policy formation and introduces a comparative approach as a tool to help political scientists and policymakers to understand how decision-making happens. For example, cost-benefit analysis (CBA), which uses rational, scientific or mechanical processes, is suggested as an incremental approach to understanding decision-making. Lindblom tries to describe how decisions are made through various methods of analysis, including root vs. branch, evaluation and empirical analysis, ends vs. means, testing hypotheses, and non-comprehensive analysis of relevance vs. realism. However, he concludes that given the short succession of events, incremental analysis often helps to determine policies.

iv) System theory

David Easton's system theory (1953) is a means to understand various political systems and their system of steps. Easton's theory was created in 1953 in an effort to understand how a society's authoritative decisions are made and executed. The process starts with the inputs into the government, which are the demands and the supports. These inputs are then converted by the processes of the system into outputs. These in turn appear as consequences for both the system and the environment in which the system exists: that is, as feedback. From this point, the government will listen to external feedback and other systems before returning once again to the inputs of demands and supports. The formula here is: inputs-process-outputs. These relationships are shown diagrammatically in Figure 2.3 (Easton, 1957):

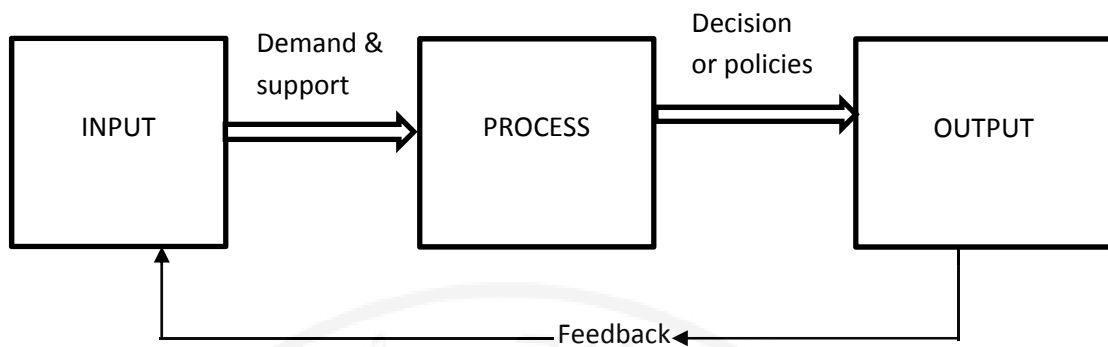


Figure 2.3 The cycle of the Easton's system theory (1953)

Easton's system theory can be used worldwide to understand each country's system and its policies. Easton believed that the input was essential because the government needs to create internal feedback and then support for that internal feedback in order to issue laws and run the country. Inputs are demand or support. They are the raw material or the information that the system is called upon to process and the energy to keep it going. Meanwhile, the outputs become the mechanism of the support: this might be a political decision or policy. One important way to strengthen the ties of the members to their system is to provide decisions that tend to satisfy the day-to-day demands of these members. The outputs consist of political decisions and constitute a body of specific inducement for the members of a system to support that system (Ibid, 1957).

All of these theories – rational choice theory, incremental theory and system theory – have been introduced into research to form a basis to study the nature of policy or governmental decisions. In this case, it is to study ESD in Thailand, and specifically Furthermore, the process of policy implementation. Policy implementation theory thus needs to be reviewed to understand the whole picture.

2.1.2.3 Policy Implementation

The range of the policy implementation literature was originated in the 1970s in response to the developing movement toward evaluating the Great Society programs of the 1960s (Rossi, Freeman, & Lipsey, 1999). There are two dominant perspectives for assessing implementation outputs. First, the top-down approach takes a macro view of the application by examining the process from the standpoint of the original policy maker or the policy itself. The top-down paradigm

seeks to answer the following questions: To what extent do implementation procedures coincide with original policy objectives? Moreover, has the policy been implemented as intended (Pressman & Wildavsky, 1973)? Top-down theorists like Sabatier and Mazmanian (1983) developed a scheme for gauging effective policy implementation. Sabatier and Mazmanian suggest that six factors must be present for successful implementation to occur.

a) Top-down policy implementation

The availability of resources within the organization is a similar support characteristic of the implementing agency. Sabatier and Mazmanian assume that a group with scant resources are more likely to implement a policy, if implementation results in additional funds being added to the coffers. The second critical factor identified is the level of cooperation between agencies involved in implementation. The number of veto or clearance points, which means authority held by multiple actors that either facilitate or impede implementation, can be used to gauge the level of cooperation. The more actors involved in essential implementation decision-making, the more complicated and strained the cooperative relationship between agencies (Sabatier & Mazmanian, 1983; Bardach, 1977; Berman, 1978; Pressman & Wildavsky, 1973). This relationship is further hindered if there is a change in the environment (the third critical factor) in which the implementing organizations function. For example, changes in the social or political climate may cause particular issues to fall out of favour with policymakers and the public and subsequently affect funding sources. This scarcity of financial resources, the fourth factor, creates an environment in which cooperation among organizations is hampered by competitiveness for funds. According to Sabatier and Mazmanian (1983), in situations where: 1) resources (financial, human, and technical) are sparse; 2) there is a multiplicity of clearance points; and 3) exogenous factors threaten implementation, the support and skill of an adept leader are required (the fifth factor). Bardach (1977) refers to these individuals as 'fixers' (the sixth factor). The fixer is the mediator between policy makers and implementers. He/she has control over resources and monitors the implementation process. The fixer bargains and

negotiates with all parties, using resources as leverage points to achieve implementation goals (Bardach, 1977).

b) Bottom-up Policy Implementation

Lipsky's book, entitled *Street-level Bureaucracy* (1960), is a challenge to the top-down model of policy implementation models and the beginning point of a bottom-up model. Lipsky argued that public policy is not best understood as formulated in legislatures or by high-ranking administrators. In significant ways, it is created in the crowded offices and daily encounters with street-level workers. Also, the street-level bureaucrats establish the devices they invent to cope with uncertainties and work pressures, which actually become the public policies they carry out (Lipsky, 1980)

Lipsky underlines that in implementing policy at street level, front-line workers are confronted with conflict and ambiguities. These may include three issues. Firstly, they may face scarce resources and poor working conditions, such as large classes for teachers, huge caseloads for social workers, or dangerous and hostile neighbourhoods for police officers. Secondly, they may find unpredictable, uncooperative and sceptical clients. Finally, they may encounter unclear and ambiguous job specifications and guidelines (Ibid).

Street-level bureaucrats try coping strategies or even survival strategies to deal with these unaccommodating working situations, inadequacies and uncertainties. In fact, in their daily routines, street-level bureaucrats have considerable power and discretions at their disposal. This may lead to substantial deviations from, if not complete alterations of, official and top-down policy specifications (Ibid).

These latitudes or even variations may take the form of modification of client demand; that is, they may include various devices to delay, deter or practically dissolve customers' needs in many working situations. Furthermore, ways to modify job conception may include strategies for decreasing service standards or even changes to the nature and functions of services, which tend to be delivered to reduce excessive demands. Finally, ways to modify client

conceptions may include devices for differentiating clients into non-mandatory categories and for the provision of different services.

According to Pruet Siribanpitak (2008), ESD cannot happen with top-down implementation, as research indicates that bottom-up implementation is the ideal way to shape the conceptual framework. Bottom-up policy implementation encourages researchers to find more theories which support the bottom-up characteristics of implementing a policy. Civic participation and the co-production approach are very interesting concepts to explore, and will be closely examined in this thesis. Moreover, it is intriguing to study the factors that contribute to the success of ESD implementation.

2.1.2.4 Policy Monitoring

Policy maintenance means keeping the policy or program going after it has been adopted. Policy monitoring refers to the process of detecting how the policy is doing, and is achieved by gathering data about the policy. A good implementation plan will suggest some ways to collect current data about the system. It can be generated in the regular course of policy maintenance: for example, from records, documents, feedback from program clients, diary entries of staff, ratings by peers, tests, observation, and physical evidence.

a) Formative evaluation vs. summative evaluation

If monitoring processes are adequate, it should be relatively easy to detect whether a policy has been implemented as intended. This type of policy control has been referred to as formative evaluation. Formative evaluation documents and analyzes how policy is implemented, with the objective of making improvements as the implementation process unfolds. Summative evaluation is undergone after a program has been fully implemented. It looks at whether the program is meeting its objectives, and why or why not (Policy and Procedures for Assessment and Internal Verification, n.d.).

b) Policy Analysis

Policy analysis can be considered as a kind of evaluation; however, its aim is to check the feasibility of the policy. It can be placed at the very first stage of the cycle, before the implementation phase. It is believed to produce sound public policy. There is a series of systematic procedures or policy analysis methods that can be used to monitor contemporary policy problems. Moreover, there is a subset of these processes that are necessary methods, giving quick results and serving as theoretically appropriate aids to formulate reasonable policy decisions. The variety of public policy problems is so numerous that none builds systematic procedures that can be developed for coping with all of them. The geographic and political context for these issues is so far-ranging that they do not have much in common, thus defying any standard approaches. A process for approaching these issues has evolved and has been applied. One version takes the form shown in Figure 2.4, in which problem definition leads to the identification and evaluation of choices followed by policy implementation. There is some evidence that when time and resources are available, the analytical process take the form of this graph or an acceptably similar form.

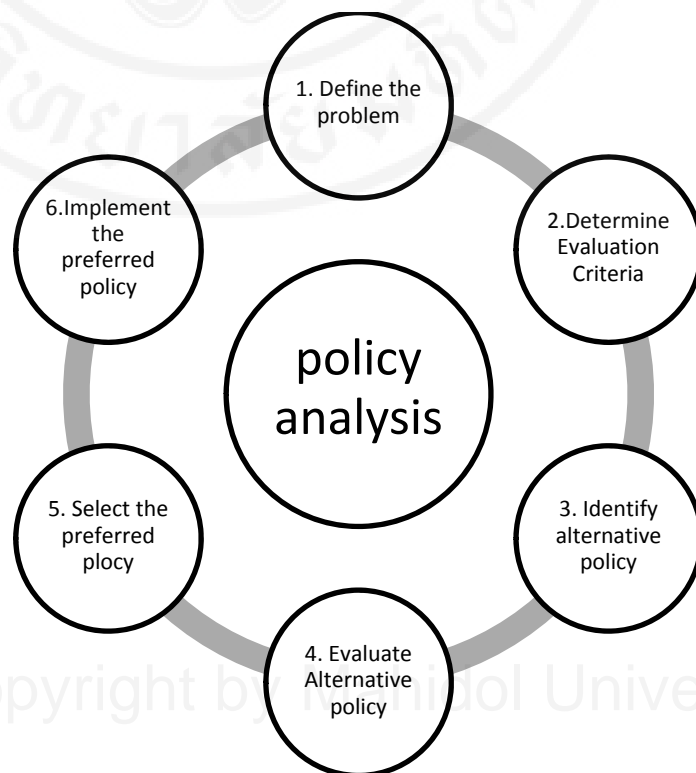


Figure 2.4 Adapted from Patton and Sawicki's Basic Policy Analysis (1993)

Policy analysts are often needed to give advice to decision-makers in incredibly short periods of time. Unlike university researchers and think-tank consultants, who are hired specifically to conduct intensive research on public policy issues, they can take more time to make good suggestions. Analysts doing this work are typically given comparatively large budgets and extended periods of time to work with large sets of data. Consequently, the methods that they use are different. For example, the analyst may choose between researched analysis and quick analysis. These are examples of how public policies are monitored after the implementation process.

2.1.3 Education Policy and its policy process

Regarding education policy, education stakeholders in this step of the policy process concern government at three levels: central level, the educational service area, and educational institutions at all levels of education. At the fundamental level, the primary responsibility for education in Thailand is under the Ministry of Education (MOE). According to the amendments of the National Education Act, the MOE handles promotion and supervision at all levels and types of education. It formulates education policies, plans, and standards; mobilizing the resources of education. Moreover, it promotes the coordination of education about religious affairs, art, culture and sport, as well as monitoring, inspecting and evaluating education provision. The five principal organs are firstly, the Office of the Permanent Secretary; secondly, the Office of the Education Council (OEC); thirdly, the Office of the Basic Education Commission (OBEC); fourthly, the Office of the Higher Education Commission (OHEC) and finally the Office of Vocational Education Commission (OVEC): see Figure 2.5 (Thailand Education System and Policy Handbook, 2008).

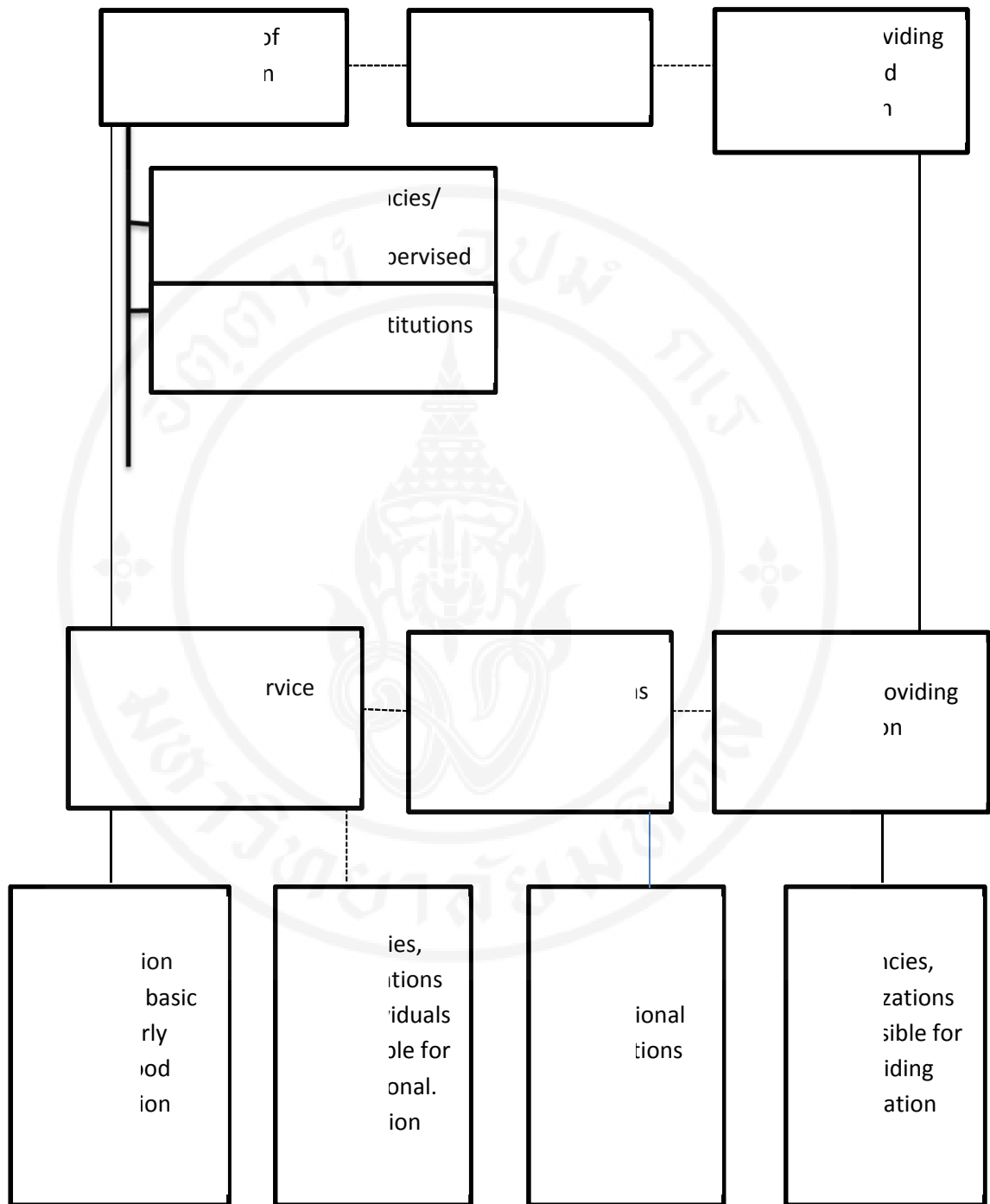


Figure 2.5 Educational Administrations and Management Structure

Source: Thailand Education System and Policy Handbook, 2008

Education service areas have been established under the jurisdiction of the Basic Education Commission in response to the decentralization of the authority of education administration as stipulated in the National Education Act. This Act requests all educational service areas to complete self-evaluation forms so as to assess their readiness concerning coordination with educational institutions under its supervision in a range of aspects, such as budgeting and resource provision. In each educational service area, there is an Area Committee for Education, comprised of community representatives, private and local administration, teachers' associations, educational administrators' associations, parent-teacher associations and scholars in education, religion, art and culture: see Figure 2.6.

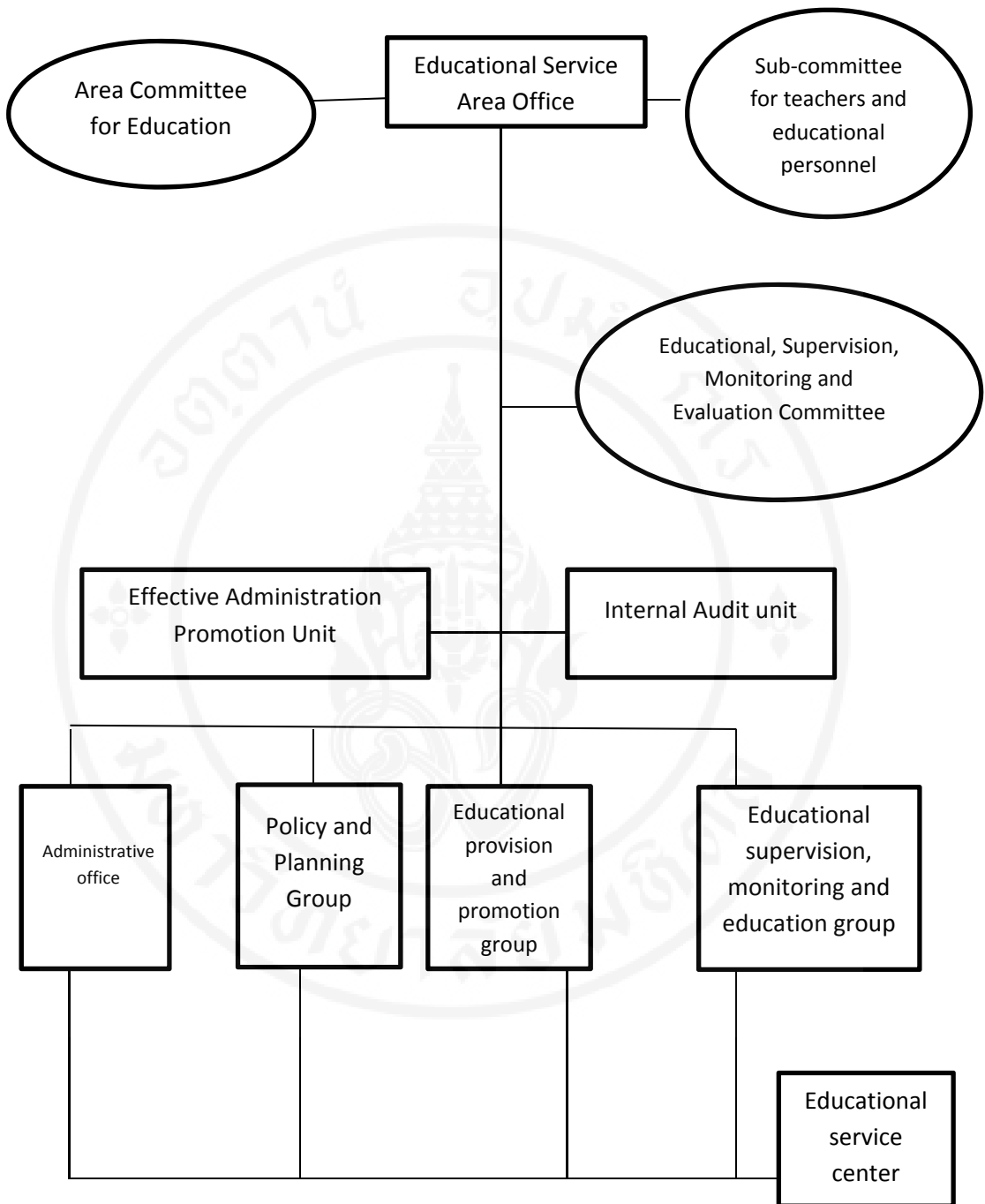


Figure 2.6 Organization of Administration in Educational Service Areas

Source: Thailand Education System and Policy Handbook, 2008

In the study, education policy for sustainable development concerns these education authorities, institutions, educators, teachers-parent associations, nation and local administration bodies and communities. They play roles in policy formation, implementation and evaluation.

2.1.4 The public educational agencies for basic education in Thailand

2.1.4.1 The Office of the Basic Education Commission (OBEC)

In 2015, statistics showed that the number of schools under the OBEC had reached approximately 30,000 (www.obec.go.th). OBEC, firstly, is responsible for making policies, educational development plans, educational management standards and the basic education curriculums. Second, they manage the regulations with regard to the human resources, budgets and resource allocation to support the national education provision. Third, they develop and support the information technology networks to improve all aspects of education quality. Fourth, they monitor and evaluate the management of education service areas. Fifth, they develop innovation in education for all: children, the disabled, the underprivileged and the talented. Furthermore, they collaborate with the LAOs, families, communities and others to support the provision of education. Finally, they administer the secretarial works for the Basic Education Commission (ibid).

The goals and visions of the Basic Education Core Curriculum aim to enhance the capacity of all learners as well as to attain balanced development in all respects. They include physical strength, knowledge and morality. They will be provided with basic knowledge, essential skills and favourable attitudes towards further education, livelihood and lifelong learning. Hence, the learner-centred approach is strongly advocated, based on the conviction that all are capable of learning and self-development to their highest competencies (The Basic Education Core Curriculum, 2008).

The following goals were formulated for success in completing basic education. Firstly, the curriculum aims to enhance morality, ethics, self-esteem, desirable values, self-discipline, observance of Buddhist philosophy or other religions,

and guiding the Sufficiency Economy concepts in students' lives. Secondly, it aims to develop knowledge and skills for communication, critical thinking, problem-solving, technological knowledge, and life skills. Thirdly, it encourages good physical and mental health and hygiene. Fourthly, it aims to embed awareness of responsibilities and commitment as Thai citizens and members of the world community. Moreover, it supports the idea of patriotism and adherence to a democracy under a constitutional monarchy. Finally, it motivates Thai learners to acknowledge the need to preserve all aspects of Thai culture and Thai wisdom. In addition, it develops the sense of protection and conservation of the environment, public-mindedness with dedication to public service, and living their lives in harmony and peace (Ibid, 2008). In reality, Thai education management has encountered many barriers and is in need of reformation. One issue that has been discussed by the Thai educational authorities is decentralization.

2.1.4.2 Local Administration Organizations (LAOs) and the decentralization of education management.

Thailand's education reform due to the low quality of education in primary and secondary schools in rural and even urban areas has encouraged decentralization. A critical issue is how to enhance the quality of individual schools or school teachers, especially in the countryside. The Thai government's public commitment to decentralization was seen in the Decentralization Act of 1999. In summary, decentralization seeks to increase efficiency in educational management and provision, to strengthen participation and to decentralize power from central to educational service areas and educational institutions (Ampa Keawkumkong, 2010). In 2017, approximately 1500 schools are under the Local Administration Organizations (LAOs) (www.dla.go.th). However, there are concerns about the decentralization to the LAOs: it has been found that some aspects of their duties did not meet the standards required and some were not performed at all. Furthermore, some were not performed successfully because they did not cover all aspects, namely academic, financial, personal and general administration (Keawkumkong, 2010). Another problem is how to implement the student-centred learning approach at all levels of education. In terms of the decentralization policy,

there have been concerns over whether the local LAOs' administrators have sufficient knowledge of education administration (Education System Profiles, 2017). In general, education is financed by the national budget. LAOs are encouraged to mobilize local resources for education. Furthermore, they give local authorities the power to collect and manage local taxes. That is a mechanism for facilitating achievement of this objective to allow LAOs to take responsibility for their local education according to the Decentralization Act of 1999 (Ibid, 2017).

The decentralization of education provision to the LAOs has advantages, but there are barriers, such as administrators who lack vision, insufficiency of personnel, and lack of participation from the communities in educational management (Ritcharoon et al, 2011). We thus urgently need to build capacities and practices for more systematic assessment using available data analysis. Different indicators at various levels of the educational administration, especially down to the local government organizations, need to be better studied and applied to improve policies, planning, and management decision-making. Formal, non-formal and informal education should be enhanced in various ways. Community-based learning is another key area, since it meets the local needs and takes into account cultural involvement and the co-production approach.

2.1.4.3 Office of the Permanent Secretary, Ministry of Education

After the Thai bureaucratic reformation in 2002, the Office of the Permanent Secretary became the main actor in taking care of the activities of the Office of the Private Education Commission (OPEC) and the Office of the Non-Formal and Informal Education (ONIE). There are approximately 4,000 private schools under the OPEC (www.opec.go.th). In addition, the ONIE takes care of approximately 1,000 Non-Formal Education Centres according to the Annual Report of the Non-Formal and Informal Education (ONIE) in 2015 (Online) . Their duties and responsibilities toward the two educational agencies involve the supervision and policy making; for example, making implementation plans, private education development plans, rules, regulations, enactments, and standards, as well as doing the assessment and evaluation.

2.1.4.4 National office of Buddhism

The General Education Section of PhraPariyattidhamma Schools under the National office of Buddhism, teach general education according to the core curriculum of the Ministry of Education to the Buddhist novices and monks in the Mathayom 1- Mathayom 6 (Grade 7 – grade 12). Moreover, the schools offer the Buddhism and Pali-Sanskrit teaching. In summary, they are the specific schools that provide basic education for the Buddhist novices and monks according to the National Education Act B.E.2542 (1999). Nowadays, there are approximately 400 schools nationwide.

2.1.4.5 Border Patrol Police Bureau

The Border Patrol Police Bureau takes care of approximately 180 Border Patrol Police Schools (<http://bpps.in.th>). The initial establishment of the schools was a royal initiative to serve the equality in education provision to the students living in remote areas with difficulties. The opportunity to access to the education is rare for them. The schools firstly was managed and taught by the border patrol police who had chances to meet the underprivileged children in the rural areas. Nowadays, some of teacher positions are replaced by professional teachers but there are still some border patrol police taking the teacher roles. The differences between the schools under the OBEC and the Border Patrol Police Schools under The Border Patrol Police Bureau are the budget allocations and the budget sources. The Border Patrol Police Schools receive the direct budget from the Border Patrol Police Bureau that is more restrict in the spending regulations (Kittinan Nakthong, 2015).

2.1.4.6 Office of the Higher Education Commission

The Office of the Higher Education Commission has 81 demonstration schools under their supervision (<http://www.info.mua.go.th/>). The demonstration schools provide an elementary or secondary education operated in association with a university, college, or other teacher education institution. Moreover, they are used for the training of future teachers, educational experimentation, educational research, and professional development.

2.2 Education for sustainable development and its history

2.2.1 “Sustainability” and “Sustainable development”: background, concepts and definition.

In the 8th Millennium Development Goal (MDG), sustainability is mentioned repeatedly. In the UN policy, sustainability means is defined as the “ability to make development sustainable to secure the needs of the present without compromising the capacities of future generations to respond to their needs” (WCED 1987, cited in Robert W. Kates, 2005)

Sustainability is a broad idea that should be used to guide research in all of its facets. It is not a set of technologies (Graham-Tomasi, 1991). The definition refers to “the ability to maintain a given flow over from the base upon which that flow depends” and it is “primarily an issue of intergenerational equity” (Norgaard, 1992, p. i). It involves the calculation of the balance between present and future use of a resource or set of resources, as well as debate over the valuation of resources for different uses.

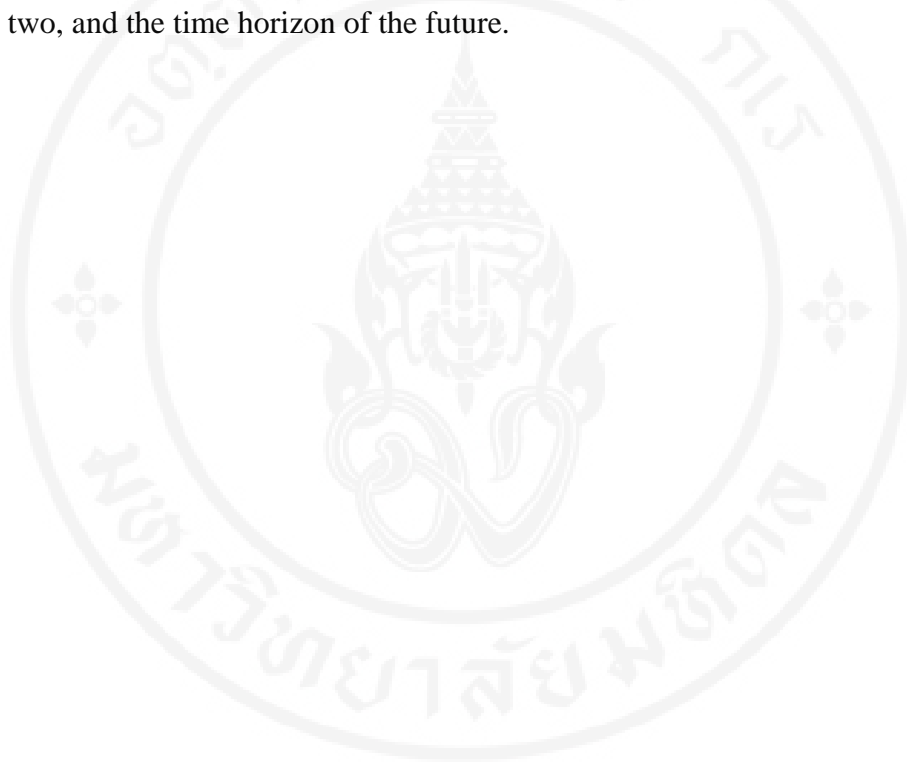
According to USAID, sustainability is a measure of how the growth, maintenance, or a degradation of a resource or series of resources affects a population’s ability to sustain itself. Resources might be natural or human and include knowledge, technical, financial and other social systems. Moreover, a resource can be a property of processes, investments, technologies and systems, as they affect the resources available to a population or time.

The term “Sustainable Development” was first introduced in the World Conservation Strategy in 1980 and was widely used in the Brundtland Report (WCED, 1987). Although the environment or society is not explicitly mentioned in the brief definition, the desire to sustain them is clear. With regard to development, the report states that human needs are not only fundamental and essential to economic growth but also equity to share resources with the poor. Moreover, SD can be encouraged by effective citizen participation.

“Development” is simply defined as a real change (Chambers, 2005). However, the Social Sciences’ Dictionary suggests that development is not only important for humans but also for the environment (Calhoun, 2002). The Brundtland

Commission (1987) stated that development had as its primary objective “the satisfaction of human needs and aspirations.”

One critical study, by the Board on Sustainable Development of the U.S. National Academy of Sciences, tried to bring some order to the extensive literature that the members reviewed. The report, "Our Common Journey: A Transition Toward Sustainability", focused on the inherent differences between what advocates and analysts attempted to sustain and what they tried to develop, the relationship between the two, and the time horizon of the future.



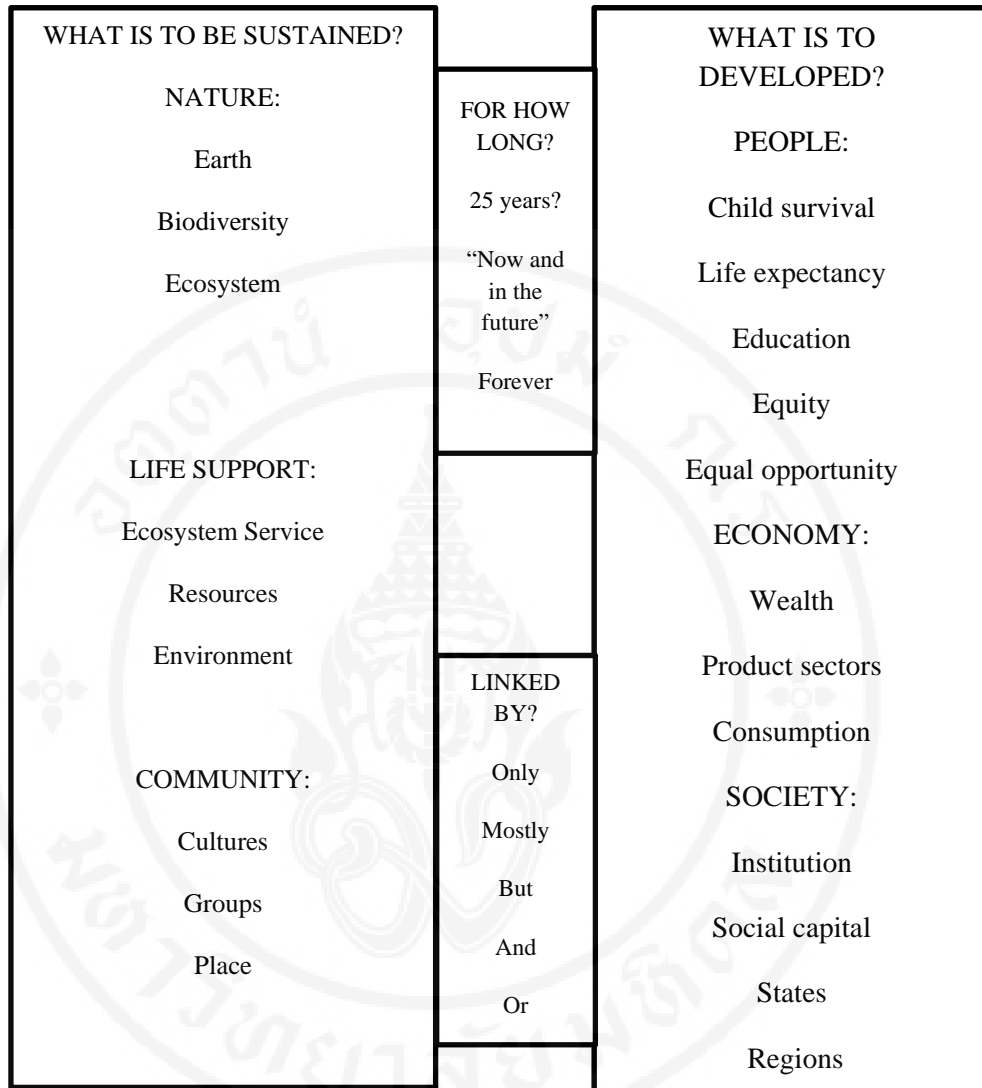


Figure 2.7 Definition of Sustainable development

Source: U.S. National Research Council, Policy Division, Board on Sustainable Development, *Our Common Journey: A Transition Toward Sustainability* (Washington, DC: National Academy Press, 1999, Cited in Kates, et al, 2005)

“Sustainability”, therefore, is a broad concept, encompassing sustainable development, sustainable products, sustainable economic activity, sustainable consumption and sustainable policies. Sustainability is not a modern phenomenon; however, sustainability as a characteristic of modern societies is a new idea (Raggamby and Rubik, 2012). By the end of the 1960s, Daniel Lerner (1968) had worked out the characteristics of a modern society in some detail. It includes a

growing, self-supporting economy. Furthermore, it involves democratic participation in policies, and a culture that is oriented towards secular and rational norms. Finally, it is a comparative society equipped with personal freedoms that is geographically, socially and intellectually mobile.

All in all, people should concern themselves with sustainability policies to achieve the SD goals. There are several theories of sustainability, but in this research, the concepts used are based on UN concepts. Furthermore, it introduces some considerable thought toward sustainability, especially in relation to Thai norms, traditions, beliefs and religion. The following sections provide some examples.

2.2.1.1 Example of Western concepts of “Sustainability”:

Small is Beautiful by E. F. Schumacher

Schumacher (1973) called for a people-centred economics because that would, in his view, enable environmental and human sustainability. He mentions the problem of production, arguing that the modern economy is unsustainable. Nowadays, society treats natural resources as expendable income. Since they are not renewable and are subject to eventual depletion, they should be treated as capital. The economic system is similarly dehumanizing, making decisions on the basis of profitability rather than human need.

"Enoughness" is one of Schumacher's philosophies. He contemplated human needs, limitations and proper use of technology. He studied village-based economics, which he later named "Buddhist economics". Enoughness was a radical challenge, which has been gradually adopted and distorted by the ongoing, greedy expansion of consumer capitalism. Schumacher raises many issues with which our society is still fighting. He questions the signal of economic growth as the central preoccupation of politics and discusses resource limitations on economic development. Moreover, he consistently confirms that material wealth cannot contribute to human happiness. His vision of human need would strike a chord with 21st-century readers.

Schumacher warns about issues that we are now dealing with, such as levels of mental illness. Depression, anxiety, panic attacks and stress are among mental diseases about which the World Health Organization (WHO) is

particularly concerned. The WHO predicts that depression will be the second most common health problem in western developed nations by 2020. This is what Schumacher fears. According to him, the answer is that "Small is beautiful". This notion refers to the relationships among human needs and human relationships, and stewardship of the environment.

It is striking that Schumacher's idea has now become a strong idealism. Eventually, our thinking is framed into a dead end of technocratic managerialism. The suggestion is that scholars and politicians should all agree to accept what we have to take care of for our sustainable future.

2.2.1.2 Past Research regarding SD

Sustainability and Sustainable Development (SD) are quite broad ideas involving three pillars: Social, Environment, and Economic. Therefore, numerous researchers in this field are investigating ways to move forward to a sustainable future. The following are some examples of research that emphasize the importance of sustainability studies:

Abey Suriya's (2008) study, "A Pathway for Sustainability in Urban Sanitation for Developing Asean Countries", highlights the role of the dominant perspective and organization worldviews of sanitation practice, with a particular focus on practices aligned with sustainability. The researcher uses the transdisciplinary approach as a methodology to explore new and relevant processes and ideas to solve urban sanitation problems. The transdisciplinary methodological approach concerns scientific methods together with their dialogues and their reconciliation with the humanities and social sciences, as well as with arts, literature, poetry and spiritual experience (CIRET, 1994, cited in Abey Suriya, 2008). The thesis presents a framework for participation to help decision-makers in resolving problematic sanitation. Furthermore, it encourages the principle of cooperation between stakeholders and the sustainability discourse's emphasis on democracy and involvement in decisions that affect them. Regarding sustainability, it is found that the sustainability discourse frames sustainability as a "learning concept." It proposes that efforts to explain and learn are more fruitful in gaining improvements to problems than in seeking to predict and control complex planning situations.

Supawatanakorn Wongthanavasu's (2003) research, entitled "Systems Dynamics Modeling for Sustainability of Development Program in Thailand: A Case of the Thailand's National Family Planning Program", studied the Thai National Family program, launched in 1970, which was one of the most successful development activities. The research examined the perspectives of policy-makers and planners. It required the development of a tool named "dynamic systems modeling" and was designed to achieve sustainability. The findings show that Thailand is a fortunate country in terms of family planning programming, due to the dramatic decline in births and fertility levels. The research confirms that the population policy adopted in March 1970 is the main driving force for launching family planning operations in Thailand. However, when it comes to the question of whether Thailand has achieved "Sustainability" in family planning programming, the answer becomes ambiguous. The researcher mentions that the question is quite intriguing because it requires definitions of the terms "Sustain" and "Sustainability." The System Dynamic Perspective helps to create a model of the National Family Planning programming by connecting five interrelated subsystems, namely economic, political, social, population and organization management. In summary, the calibrated model in this research confirms that the political system is the primary mover of the family planning program. In the same way, the benefits of the family planning program feed back into the political system to increase political support and thus to "sustain" the program.

Thitirat Chaosakul (2005) presents the problem of sustainability challenges on sewage and domestic wastewater treatment in a thesis entitled "appraisal of Environmental Sustainability Indicators on the Conventional Sewerage and Domestic Wastewater Treatment Systems in Thailand: Case Study in Bangkok City". As a result of increasing pressures on the waste management problems, changes in the present and future treatment systems are required to achieve sustainability. Sustainability challenges people to shift towards excellent resource utilization and favours transformation from unsustainable practices to sustainable ones. The application of the eco-indicator 95 and 99 methods of life cycle assessment (LCA) is presented. The LCA methodology is shown to be an appropriate instrument to evaluate the wastewater treatment system with regard to sustainability. Also, the

environmental technical, economic and socio-cultural aspects are considered to evaluate sustainability and appraise sustainability indicators for both centralized and decentralized systems.

Susan Spierre Clark (2013) recently undertook a study entitled “Examining a Sustainable Approach to Global Climate Change Policy”. Within the United Nation’s Framework Convention on Climate Change (UNFCCC), carbon dioxide (CO₂) allocation is a priority in the development plan. Although the likelihood of achieving substantial emission reduction is increased, there is a lack of consideration of how an ethic of development might be advanced. Thus, this research empirically examines the role played by CO₂ in advancing Human Development according to the Human Development Index (HDI) over the period from 1990 to 2010. The findings show that future emission targets should reduce current emissions in developed nations and allow space for HDI growth in developing countries as well as in the least developed nations of the world. Emission trading should be limited to countries with similar HDI levels to protect less-developed nations from unfair competition for capacity-building resources. Lastly, developed countries should be encouraged to invest in joint-venture production within the LDCs to build capacity for self-reliance, as this promotes sustainable development over the long term.

Peter Devereux (2010) conducted a study entitled “International Volunteers: Cheap help or transformational solidarity toward sustainable development?” There is growing interest in international development cooperation, while international volunteers in development represent a parallel growing issue. The research investigates the current international development context and the characteristics, contributions and recognition of foreign volunteers. Many volunteers serve for at least one year in development and sustainability work through independent international volunteer cooperation organizations (IVCOs). The researcher reviewed email discussions hosted by the United Nations Volunteers World Volunteer Web. The sample included participants in a hundred countries, together with interviews with twenty-four volunteers and seventy-five other stakeholders and an email survey of 30 international volunteers from 16 countries. The survey took place mainly in Central America and Cambodia. The email survey and interview results are organized and analyzed using NVivo software. Key elements of

international volunteer role and characteristics are shown to be particularly conducive to improve on past practices and impose the new requirements of the current development context and its major links to sustainability. In summary, international volunteers for development and sustainability fit well within a relational view of development. This relational view emphasizes capacity development, reciprocal learning, and the indirect approach to cultivating respect for local ownership, autonomy and accountability in development.

From the literature, we can see some difficulties in setting the theme of sustainability as the research arena, because the term “sustainable” itself is a contested concept and needs interpretation. This is also the case in Thailand. Future researchers should define the term “sustainable” in the local context.

2.2.2 Thailand National development plans: a good start on Sustainable Development Policies in Thailand

From Thailand’s First National Development Plans until the Tenth, the development paradigm has developed in the context of international and internal changes. A significant move to the country’s development planning has taken place since the Eighth Plan (1997-2001), with a change from a growth-oriented approach to the new model of holistic “people-centred development.” As a priority, more balanced development was ensured by encouraging broad-based participation that would actively involve civil society, academia and the private sector in the creation of the national development plan. Nevertheless, improper economic management, which stimulated the 1997 Asian Crisis, urged the adoption of the Philosophy of Sufficiency Economy. This became a tool in creating the guiding principle in the Ninth Plan (2002-2006). Meanwhile, its practical applications became visible during the Tenth Plan (2006-2011). In any attempt to achieve sustainable development with a people-centred approach, it is important to improve the country’s self-resilience by enforcing its economic and social capital. Moreover, it is vital to improve risk management so that internal and external uncertainties can be handled more efficiently. This leads the country toward sustainable development and a “Happy Society.”

During the Tenth Plan, the Philosophy of Sufficiency Economy was applied extensively in Thailand’s development context, resulting in better resilience in

various aspects of Thai society. It enabled the nation to cope effectively with the impacts of the 2008 global economic crisis. The Green and Happiness Index (GHI) showed that 65-67 percent of achievement was through the contributions of strong economic performance, high employment, healthy communities and family engagement. However, significant barriers have remained, including political unrest, environmental and ecological depreciation, improper educational quality, and serious drug problems. Nevertheless, the evaluation of the Tenth Plan showed an improved economic basis for development and increasing quality of growth. Quality of life improved through better access to various economic and social security measures. Moreover, the rate of poverty was reduced. However, it was necessary to highlight the development of human capital and human security, to promote good governance and fair competition, and to support a more equitable allocation of development benefits to reduce social inequality (the National Development Plan 11th).

During the Eleventh Plan (2012-2016), Thailand faced more complicated domestic and external challenges and fluctuations, which posed both opportunities and threats to national development. Therefore, it is essential to exploit the current resilience of Thai society and its economy. Furthermore, it is vital to prepare both individuals and society as a whole to deal with the effects of such changes. Finally, the plan plays a significant role in paving the way for well-balanced development under the Philosophy of Sufficiency Economy (Ibid).

Thailand, which is struggling with globally common problems in trying to find solutions for sustainable development, needs to balance and prepare itself for any changes. The Asian financial crisis in 1997-1998 was a critical event, and many Thai people suffered as a result of this incident. The Sufficiency Economy has correspondingly become a major focus of research. The theory imposes a solution for the relief of domestic problems, and for those that go beyond the domestic area.. Most of the schools in Thailand responded to the National Development Plan and adopted the practices of Sufficiency Economy in their classrooms. When the ESD was first introduced in Thailand, many schools had been practicing the Sufficiency Economy, which was also based on a focus on humans as a value asset. ACCU (2007) mentions that ESD does not have to be something new, but can use methods that already exist.

Thus, the study of ESD in Thailand should not ignore the information of the Sufficiency Economy.

2.2.2.1 Examples of Thai concepts of “Sustainability”: the Sufficiency Economy by His Majesty the King Bhumibol

Sufficiency Economy is a philosophy that was granted to the Thai people by His Majesty King Bhumibol Adulyadej since the 1950s (<http://www.chaipat.or.th>). His Majesty has indicated guidance on appropriate conduct, including numerous aspects of life, through royal speeches on many events over the past thirty years. After the economic crisis had broken out, His Majesty repeated and expanded on his “Philosophy of Sufficiency Economy” in remarks made in December 1997 and 1998. In the face of global challenges, the philosophy pinpoints the means for a recovery that will lead to a more resilient and sustainable economy.

Sufficiency Economy underlines the middle path as an overriding principle for appropriate conduct by Thai people at all levels, from family or community to a national level. It calls for national development and administration to be modernized in line with the waves of globalization. “Sufficiency” is a hybrid concept of moderation, reasonableness, and the need for self-immunity. It appears to be sufficient protection from impacts arising from internal and external changes. (NESDB, 2007). The adoption of knowledge with due consideration and prudence is essential to achieve this concept. In particular, it is necessary to take good care at every step in the utilization of theories and methodologies for planning and implementation. At the same time, it is crucial to strengthen the moral fibre of the nation (Towards a Sufficiency Economy, n.d.).

In particular, public officials, academics, and business people adhere first and foremost to the principle of honesty and integrity. To initiate balance and ability to cope appropriately with critical challenges, which come from world changes in socioeconomic, environmental, and cultural aspects, a way of life based on patience, perseverance, diligence, wisdom, and prudence is indispensable.

2.2.2.2 Examples of Thai concepts of “Sustainability: P.A. Payutto’s Sustainability Development

In the Thai context, P.A. Payutto (1996) studies sustainability and sustainable development based on the Buddhist Philosophy. He encourages people-centred development. To evaluate whether such development is sustainable or unsustainable, he mentions four factors: 1) Humans, 2) Society, 3) Nature, and 4) Technology. However, it is necessary to provide the right definition for the term “People-centred”.

There is sometimes confusion about the term “People-centred” due to people’s cultural roots. An obsolete idea of the “people-centred” concept is that humans are the centre of everything, and that people have the power and right to monitor and manipulate nature and resources. P.A. Payutto clarifies the idea from a Buddhist perspective. In his opinion, people-centred development has three key features.

First of all, it aims to improve the quality of people, because people are a mechanism to move development forward in all other aspects (economic development, agricultural development, etc.). People are the nexus of development. Secondly, people, who are the heart of development, need to be well-qualified. We need good people with high standards and quality. Finally, the objective of development is to achieve human happiness. The processes and other components of development are supporting factors to enable people to reach the intrinsic value of quality of life.

The second factor of a sustainable development system, according to P.A. Payutto, is society. Systems under society, such as the political, economic and administrative systems, are tools for driving cause-effect natural rules to provide individual benefits. Therefore, all of these systems should be harmonized and be manipulated by the same simple rules.

Thirdly, people should remain in harmony with nature. To understand, to respect and care about nature are the “must-do” to achieve sustainability: that is, to not exploit, misuse or take advantage of nature. Technology contributes to achieving sustainability, but its advantages and disadvantages must be understood. Overall, P.A. Payutto focuses on human development as the centre of the

development process, with the duties to integrate society, nature and technology to maximize the achievement of SD. Moreover, he mentions human development in three areas: 1) behaviours, 2) mind, and 3) intellectual progress. Formal or non-formal education, therefore, is the most important feature in sustainable development (Payutto, 1996).

In the study “A Proposed Educational Model for Sustainable Development Based on Buddhism”, Dalapat Yossatorn (1999) reviews documents on the development perspectives of the United Nations (UN) and the UN Educational, Scientific and Cultural Organization (UNESCO). He then conducted interviews with experts. Similar approaches were applied to study Buddhist Philosophy of development and education based on Bhikku P.A. Payutto’s works, and then the researcher interviewed two Buddhist experts. Conceptual details of both schools were analyzed and synthesized, leading to a basis for developing a Buddhist educational model for sustainable development. The proposed model confirms that education using the Buddhist Righteous Approach of Development employing Equilibrium Development could achieve the goal of SD.

In a similar concept, Chakrit Achava-amrung (2011) studied, compiled and analyzed P.A. Payutto’s approaches to life-long learning and SD. The findings show that the sustainable development occurs when people develop according to “Sikkha”, or Threefold Learning. This approach leads to individuals, society and the environment living in balance and harmony. All forms of learning consist of teachers and learners. The teachers have to teach not only knowledge but also how to live a good and moral life.

2.2.3 The Emergence of Education for Sustainable Development

Education is essential to sustainable development. Today’s education is crucial to enhancing the ability of the leaders and citizens of tomorrow to create solutions and find new ways to a better future. Unfortunately, our current collection of human knowledge, skills, and experience do not contain the answers to all aspects of the contemporary global environmental, societal, and economic crisis. The scale of current problems is greater, and the size of the world population is larger than it was in previous times when humanity faced problems and successfully solved them. People

have a duty to create their path towards sustainability. Education is therefore a key to learning and to inventing a more sustainable future.

The question of who has responsibility for ESD is not only associated with people, but also with governments and civil society. All must contribute in their way. The forty chapters of Agenda 21 portray ways forward in many areas. They are concerned with various matters, from agriculture to waste disposal. Education is a cross-cutting theme. Each of the forty chapters mentions it in detail. This demonstrates how the education community has a particular role to perform. The society has to prepare professionals, citizens and leaders through education for life-long learning about sustainability.

The Decade of Education for Sustainable Development (DESD) takes the period from 2005 to 2014 to promote ESD. ESD, also known as "Education for Sustainability (EfS) in some parts of the world, is a fundamental concept of education in the new millennium. ESD is a broad concept that introduces a distinctive orientation to many essential features of education. That is, all aspects include access, relevance, equity and inclusivity of education

2.2.3.1 Background to Education for Sustainable Development (ESD)

ESD is an extensive idea with the objectives of building social transformation and creating more sustainable societies. ESD accesses every aspect of education, including planning, policy development, program implementation, curricula, finance, teaching, learning, assessment, and administration. ESD is geared towards the creation of a coherent interaction between education, public awareness, and training. Its vision and mission are to create a more sustainable future.

ESD has several essential characteristics and is performed in many culturally appropriate forms. It is based on principles and values that highlight sustainable development. It involves all three spheres of sustainability – environment, society, and economy – together with the underlying aspect of culture. Additionally, ESD applies a vast range of pedagogical techniques that encourage participatory learning and higher-order thinking skills. Primarily, it promotes life-long learning. ESD becomes locally relevant and culturally appropriate. It depends on local needs,

perceptions and conditions. In this situation, it acknowledges that fulfilling local needs often has international effects and consequences. ESD engages formal, non-formal and informal education. Finally, ESD accommodates the evolving nature of the concept of SD. It focuses on the ideals and principles that underlie sustainability (UNESCO, 2006). To define the term "Sustainability", we have to take into account all of these factors: intergenerational equity, gender equity, tolerance, peace, poverty reduction, environmental preservation and restoration, natural resource conservation, and social justice. The Rio Declaration, which came up at the Earth Summit in 1992, consists of 27 principles of sustainability (UNEP, n.d.). For instance, one of the major principles is that people have the right to have a healthy life and live productively in harmony with nature. Another mentions that development must fulfil equitably life quality and the developmental and environmental needs of present and future generations. The other example is the idea of eradicating poverty and reducing disparities in living standards. These all are important concepts SD.

To focus more precisely on ESD, we need to look at UNESCO policy. According to UNESCO (2006), there are seven essential characteristics of ESD, as follows:

Firstly, interdisciplinary and holistic learning for sustainable development must be embedded in the whole curriculum. Policy-makers should not set ESD as a separate subject. Secondly, ESD can be examined, debated, tested and applied. It is value-driven norms that basically underpin SD. Thirdly, ESD encourages critical thinking and problem-solving. This leads to confidence in addressing the dilemmas and challenges of sustainable development. Fourthly, ESD used multiple methods, such as words, art, drama, debate and experience. Additionally, it applies different pedagogies according to model processes. To be more precise, ESD is a domain where teaching is commonly geared to manage knowledge from teachers and learners working together. This approach aims to acquire knowledge and play a role in shaping the environment of their educational institutions. Fifthly, ESD underlines participatory decision-making. This means that learners participate in decisions on how they are to learn. Sixthly, ESD has a focus on applicability: that is, the learning experiences and knowledge are integrated with routine personal and professional life. Finally, ESD is locally relevant. It addresses local as well as global issues.

Furthermore, it uses the languages that learners most commonly use. Concepts of sustainable development must be carefully and meaningfully expressed in other languages because languages and cultures say things differently. Also, each language has its own creative ways of presenting new ideas (Ibid, 2006).

2.2.3.2 ESD in Thailand

The concept of ESD is interwoven with the Tenth National Economic and Development Plan (2007-2011), which directs the national development framework in line with His Majesty the King's Sufficiency Economy. The Plan is supported by a philosophy that encourages the middle path to achieve sustainable development, with equilibrium between Economics, Society, and Environment (Yupa Wiengkamol Addodorn, 2011), and strives to mobilize ideas through the popular participation of people in all sectors, groups and regions across the country in every step of the planning process. There is a consensus to adopt the philosophy of the Sufficiency Economy as the guideline for action, in conjunction with a holistic people-centred development approach. The purpose is to move national development towards fairness and sustainability, with sound equilibrium, and to pave the way towards a "happy society" to enhance the wellness of all people.

The educational revolution and educational reformation formed a crucial strategy that was highlighted in the National Education Act of B.E. 2542 (1999) and the National Education Plan of B.E. 2545 – 2559 (2002-2016). They were strategic plans based on the philosophy of Sufficiency Economy. The Reformation concerned education management and curriculums. Most Thai educators consider education quality as a strategic tool in all aspects of economic, social and political development. The main concept of development has shifted from economic development to sustainable development. In terms of education, the new meaning of development was integrated into an objective setting. To be more specific, the ultimate goal of education management aimed to achieve "sustainable development" to maintain long-term national prosperity, stability, and competency to other nations (UNESCO, n.d.).

Under the ACCU – UNESCO Asia-Pacific ESD programme, ESD was first introduced to Thailand in 2006. ACCU, the Asia/Pacific Cultural Centre

for UNESCO, is a non-profit organization that works in line with the principles of UNESCO to promote mutual understanding and cultural cooperation among people in the Asia/Pacific Region. To transform the broad concept of ESD into concrete activities, a seminar called “ACCU-UNESCO Joint Regional Seminar for the Promotion of Education for Sustainable development in Asia and the Pacific” was organized in Japan from February 23 to February 26, 2006 with the six realms of ESD: gender issues, poverty reduction, natural disaster preparedness, community development, cultural diversity and environmental education. ACCU mentions that “ESD-oriented” activities refer to those with more than a single issue by taking an approach that envisions a sustainable society in which human beings can coexist with nature. These activities are not something new but something that already exists (ACCU, 2007).

The Human Capital and Quality of people have become ideas that help to increase competency in economic and social development. For this reason, it is the duty of education authorities and schools to provide meaningful education to people. This corresponds to the major concept of the Decade of Education for Education Development by UNESCO (2006); that is, the change for better life quality starts with “Education”. Moreover, ESD is a must, not an alternative. Finally, ESD is everyone’s duty. Therefore, schools should be actors in implementing ESD and integrating all of its concepts into their curriculum.

These strategies are obviously useful in education management in every unit. The research focuses on the Basic Education Unit in Thai education systems, as this is the foundation where childhood education starts. School curricula generally do not meet the needs of the students and those of their families and communities, and ignore the indigenous knowledge that should be integrated in the local curriculum (Somphone, 2007).

2.2.3.3 Community-based education

Community education, also known as community-based education or community learning and development, is defined as an organization’s programs to encourage learning and social development tasks. Individuals and groups in communities use a combined scope of formal and informal strategies to develop the

dialogue between communities and participants. The objective of community-based education is to improve the ability of individuals and communities, including people of all ages, using their actions and the capacity of communities to enhance their living standard and quality. The central idea is their ability to engage themselves in democratic participation.

Community education gathers professionals and approaches that undergo training and development programs within local communities. The focus is on communities' learning process rather than on formal educational institutions such as schools, colleges and universities. Community education is sometimes referred to as informal education. Large numbers of the population in all countries are critical of aspects of the formal school system and their failure, as witnessed by the number of illiterate students. Additionally, there is particular concern about impeding learning and development opportunities in some parts of society, particularly socio-economically disadvantaged individuals in poorer areas, although they have the right to receive the same education as people in more developed areas. Community-based education shows its importance in this aspect.

2.2.3.3.1 Past research regarding community-based education

Rapeepan Moohamud (2013) conducted a qualitative study that aimed to examine the application of principles of Islam to the community and environmental development toward sustainable development. The case study for the research was the Masjid Kamalulislam Communities located along Saen Saep canal, Bangkok. Data were gathered through participant observation and in-depth interviews with stakeholders, comprising religious leaders, Kho Tep (who serve to preach to members in the mosque), Bi Lan (by invitation to the Muslim ministry), twelve elected mosque committee members of the Masjid and a community committee network of twenty-two communities. Data was processed using descriptive content analysis. The results showed that Islam had a strong influence on Muslims' lives. Faith in God was the most important social force creating love and unity within the community, and religious leaders were also an important factor for applying Islam to conservation in Khlong Saen Saep through public relations and broadcasting. Winai

Samaun was the person who provided knowledge and persuaded the local community to take responsibility, focusing on social development and community self-reliance to lead to a better environment for developing countries. The balance of life and development covers all dimensions of sustainable development

Parkorn Suwanich (2008) mentions that the Public Policy Cycle has been developed to analyze community-based environmental policy developed by members of a particular community. The Public Policy Cycle consists of seven steps, which the researcher synthesized from many theoretical concepts. These steps are the policy problem, policy formation, policy formulation, policy implementation, policy outcome, policy evaluation, and policy feedback. The policy cycle was used to analyze seven specific community-based environmental policy cases. The cases are the Hak Muang Nan Group, Nan Province, the Thai-German Upland Development Project, Chiang Rai Province, the Mae Ta Chang Drainage Basin Project, Chiang Mai Province, the Wana Kaset Banna Isan Group, and Chachoengsao Province, the Electricity Power Station construction at Bonok, Prachuap Khirikhan Province, the Coastal Resource Administration, Trang Province, and the Chiang Mai Night Safari Project, Chiang Mai Province. According to this analysis, for the effective growth of a community-based environment public policy, the following elements are required: 1) an awareness of the destroyed environment; 2) a leader or leader group who thinks about social awareness; 3) a leader or leader group that starts initiate local community discussion informally; 4) ability to start work immediately; 5) ability to revise and seek knowledge; 6) effective networks; 7) sharing the knowledge to outside networks; 8) exploring for resources to manage the policy; 9) spreading knowledge and responsibility to other systems and 10) building a new generation to learn the environmental knowledge. Nevertheless, prerequisites for a community-based environmental public policy development are characteristics of leaders. First of all, leaders must have a new paradigm. Secondly, leaders must have a public consciousness attitude. Thirdly, leaders must be willing to invite external assistance if they need help. Fourthly, leaders must develop local regulations, and finally, the rules and regulations of the community should not contravene state policy law.

Yupa Wiengkamol Addodorn (2011) studies the current and desirable state of the academic administration of basic education institutions to promote sustainable development. She also develops the strategies of academic administration of basic administration institutions to promote sustainable development. Her findings have identified the desirable state of the academic administration of basic education institutions to encourage SD: this state involves developing the curriculum, instruction, measurement and evaluation and research for developing the quality of education. Academic administration strategies of basic education institutions to promote SD consist of four primary strategies. First of all, it is necessary to shift the paradigm of strategic research for sustainable development. Secondly, measurement and evaluation strategies are needed for sustainable development. Finally, the paradigm of curriculum strategies for sustainable development must be shifted.

Potchana Auengpaibul (2003) conducted a study titled “A Development of the Community Learning Process Model for Sustainable Development: Multi-Case Studies”. The purpose of the study is to analyze a community learning process for sustainable development, and to develop a model for a community learning process regarding sustainable development in multi-case studies. It was found that the community’s learning process enhanced its ability to balance economic, social and environmental development in a sustainable manner. There are eight steps in the learning process. The first is to review life difficulties. The second is examining critical assessment undertaken by the core community group. The third is planning a course of action. The fourth is related to the community’s discontent on public issues. The fifth is assessing feedback. The sixth is implementing approved alternatives. The seventh is developing self-confidence. The final step is reintegrating into one’s livelihood.

2.2.4 Past research regarding ESD

ESD is a broad concept that involves many sectors and many stakeholders in the field. In Thailand, there is limited research regarding how ESD and its process are adopted and implemented. The limitations of the ESD studies in Thailand include policy evaluation regarding the success, or failure of the UN policy and obstacles or

further suggestions. However, there is a considerable body of research on ESD in many other countries. Most of the studies are concerned with the implementation stage of the ESD Policy in various countries. Furthermore, they can be categorized by types or level of schools and institutions. For example, ESD is studied in Basic education as significantly as it is in Higher Education. It also happens in formal, non-formal and informal education and in skill development for employability.

Many researchers focus on the importance of ESD policy at the level of Basic education. In a study entitled “Exploring Education as a tool for Sustainable Development in Nigeria”, Nnabuo and Asodike (2014) view basic education as a tool for increasing SD by increasing citizens’ basic literacy and numeracy. Nonetheless, they highlight non-formal and informal education and vocational training as well. They explore the ESD phenomena in Nigeria and underline the importance of each sector toward sustainability. In my opinion, none of these sectors is more vital than the others. Moreover, they consider that media could help to promote SD, especially in the non-formal sector.

Shannon Susan Green, in her thesis entitled “Pre-school Teachers’ Early Perceptions of Education for Sustainable Development in Early Childhood Education” (2013), explores five preschool teachers’ perceptions of ESD in Early Childhood Education (ECE). The findings reveal that the participating teachers show a willingness to reflect on the principles of sustainable development, recognition of the value of a participatory and problem-based curriculum, commitment to developmentally appropriate practice, and appreciation for the benefits of community engagement. Several keywords emerge regarding ESD and ECE. The most dominant themes are about interdependence, community involvement, cultivating ESD knowledge and family involvement. However, the findings of this study are quite abstract. Therefore, the researcher suggests that there should be further research about pedagogy to develop the concepts into processes to achieve the goals of sustainability. Moreover, she presents the pedagogical concerns of ESD: these include first establishing a practice of reflection on the three interdependent pillars of sustainable development. Secondly, there is a need to commit to developmentally appropriate practice that puts the needs of children first. The third pillar concerns the use of participatory and problem-based teaching methods. Fourthly, the methods must be

meaningful and relevant to children's lives. Fifthly, they should include consistent engagement with the communities in which children live. Finally, the contextual circumstances and needs of the current setting must be considered.

In Madsen's (2013) study, "Unfolding Education for Sustainable Development as Didactic Thinking and Practice", there is an attempt to unfold how teachers interpret ESD in a school context. The researcher interviewed researchers and teachers who had collaborated in research and development projects at primary and secondary schools in two countries, namely Denmark and Ireland. A lack of clear framework and ESD content for teachers was identified. Due to the fact that ESD is a contested concept and open to individual interpretation, the combination of ideas that it entails is new to teachers. As a result, they are unsure about tackling the issues and are struggling to know how to start to integrate ESD with their teaching. Finally, different processes of concretization are apparent.

In a similar way, the situation of Pre-School and Primary schools in Romania indicated that many teachers are not aware of the ESD concept. Ana Maria Suduc, Mihai Bîzoi and Gabriel Gorghiu (2004) conducted a study of SD in pre-school and primary education in an attempt to determine the teachers' opinions on education for SD in the current Romanian educational system and to evaluate the teachers' needs. The findings show that although the Romanian curriculum for pre-school and primary education emphasizes themes for sustainable development and also for the development of key competencies, many teachers are not aware of ESD.

Another case study in Iceland shows the interest in investigating Icelandic public schools (Jóhannesson et al., 2011). The research surveyed how ESD is integrated into the public school curriculum for early childhood, compulsory and upper secondary schools. Seven essential characteristics are found: 1) values, opinions and emotions about nature and the environment, 2) knowledge contributing to a sensible use of nature, 3) welfare and public health, 4) democracy, participation, and action competence, 5) equality and multicultural issues, 6) global awareness; and finally 7) economic development and future prospects. These seven characteristics emphasize diversity and complexity in our world. The researchers agreed on a holistic and cross-curricular perspective of ESD where economic, environmental and social factors are considered as integrated entities.

Mary Joy Pigozzi (2010) conducted a study named “Implementing the UN Decade of Education for Sustainable development (DESD): Achievements, open questions and the way forward”. She mentions that ESD policies existed in many countries at a broad level to address ESD, but not many countries have specific ESD strategies. Progress in support of ESD is easier to monitor in formal education because most governments have committed themselves to including ESD in education provision. However, in most cases, these are minor adjustments to existing curricula, texts, and training programs. A few instances are encouraged by larger reformations such as a whole-school approach. Furthermore, Pigozzi highlights the importance of empowering ESD beyond formal education. This is to pave the way to reform non-formal, informal and mass education.

The research discussed above underlines the important of empowerment of ESD toward basic education. Several researchers are also interested in studying the existing ESD in higher education. The results help to support the value of ESD toward our societies.

Chad Paul Frederick (2012) conducted a study entitled “Curriculum Improvement in Education for Sustainable Development: Measuring Learning Outcomes in an Introductory Urban Planning Course”. ESD is an academic objective for many courses in higher learning. It encompasses a particular range of learning outcomes, competencies, skills and literacies that include and exceed the acquisition of content knowledge. As the methods and case studies for measuring learning outcomes in ESD are absent from the literature, he designed a study to fill the gap. This case study of an undergraduate course in urban sustainability examines the processes, pedagogies, curriculum, and methods to explore whether or not learning results in ESD are being reached.

Jason Tsai (2013) proposes four strategies for the effective implementation of ESD in university. The study is based on Taiwanese Business Schools and their attempts to integrate ESD into their programs. The concept of SD, which aims to secure a sustainable future, is encouraged to raise people’s participation. The research shows that in business schools, ESD is represented by the means to collaborate with corporations and society. The most common courses offered by business schools in Taiwan on sustainable business are corporate social responsibility (CSR), corporate

governance, enterprise ethics, green marketing, social enterprise, social entrepreneurship, etc., which aim to create awareness of sustainable business among students. The four strategies are 1) researching and encouraging class design regarding social enterprise programs, 2) integrating the “Green Schools” concept with the construction of hardware and software in business schools, 3) harmonizing with societal culture, rebuilding a positive symbiotic network of business schools, students, alumni, enterprises, and creating harmony, and 4) building a green university alliance. In this way, business schools can be the starting point for ESD. However, these strategies need encouragement and funding from government.

The importance of building partnerships to create SD as a primary attribute of ESD is also found in research in Thailand. John Renner and James Cross (2008) conducted a study entitled “Community Engagement for Sustainability: An Invitation and a Challenge to All Universities”. Engagement for sustainability and collaboration for sustainability are promoted in this paper as responsibilities of the campus community. For example, a community project in the province of Phayao, Thailand, shows possible avenues of collaboration and involvement. Moreover, current and completed research projects by small staff teams and individuals from Rajabhat Universities in Thailand demonstrate some opportunities to enhance involvement for sustainability. Lastly, the paper illustrates how the Rajabhat Universities and Boromarajonani Colleges of Nursing are responding to a mandate from the King of Thailand to contribute sustainably to the local community. This paper has focused on three significant challenges currently facing all universities: firstly, to formulate and give some exercises and practices to the UNESCO DESD and the associated Graz Declaration by rearranging university priorities; secondly, to provide stronger partnerships with local community groups corresponding to local community needs; and thirdly, at a practical level, to improve sustainability projects with the local community.

Many studies have discussed definitions, characteristics and models of ESD. Burmeister and Eilks (2013) argue that all ESD-focused models suggest the orientation of education around societal issues, whether at the local, regional, or global level. The use of an interdisciplinary approach and changes in pedagogy far exceed the mere rearranging or altering of curricula (Paden, 2000, cited in Burmeister and Eilks,

2013). ESD approaches demand implementation of a skills-oriented teaching paradigm to promote education for sustainable development which goes beyond education *about* sustainable development (McKeown, 2006, cited in Burmeister and Eilks, 2013)

In the Swedish context, Education for Sustainable Development (ESD) has been stimulated to play a critical role in adjusting principles, values, and practices in accordance with SD. A holistic approach, ethical values, norm transition and behaviour alterations are needed to achieve the aim of ESD. Nevertheless, while both external and internal impacts of the Swedish education system have affected its fundamental values and goals, core elements of ESD in the Swedish curriculum were also influenced. Thus, core values, aims, and targets are shifted into providing clearer guidelines for teaching scope and gradings, as well as knowledge of concepts and focusing on literacy skills (Chung, 2013).

Rin Watanabe (2013) investigated the implementation of ESD in Japan, specifically in Kesennuma city. The findings with regard to ESD implementation strategies emphasised: 1) Strengthening vertical and horizontal links among different educational levels, 2) Establishing partnerships with organization outside of schools, 3) Developing the curriculum, and 4) Building support systems. Participants from different sectors commented on their experiences and opinions on today's ESD in Kesennuma City, such as teacher training.

A central aspect of ESD is that learners develop the ability to evaluate global and inter-generational issues and formulate strategies for solving the problems that arise from these matters (Almlöv and Moberg, 2008, cited in Zenelaj, 2013). Further ESD studies are recommended; for example, the theory of sustainable development should be integrated with more educational curricula at all educational levels. Another suggestion is that it should be treated not simply as a theoretical and conceptual analysis but as practical training. Furthermore, integration of the principles of sustainability cannot be unusual discrete subject: it must be integrated into all the sciences, such as biology, geography, sociology, etc. In terms of approaches, interaction labour methodologies are assets that guarantee success. Another example is the identification of educational programs for sustainable education curricula in all states, regardless of the level of GDP, ethnicity, social affiliation, national borders, geographic or physical barriers, etc. The final recommendation is that more funding is

needed for education programs for sustainable development. Moreover, the grassroots level should be the main target, as it is the closest one could get to reality (Pace, 2010)

2.3 Co-Production Theory

“The public become, not the passive recipients of state services, but the active agents of their own life. They are trusted to make the right choices for themselves and their families. They become doers, not the done-for”

(David Cameron, 2007)

The concept of co-production is a challenge to policymakers in reforming public service by encouraging users to design and deliver service in equal partnership with professionals. One phenomenon in the United Kingdom mentions that there are some constraints in public service due to New Public Management (Boyle and Harris, n.d.). New Public Management (NPM) centralizes targets, deliverables, standards and customer relationship management, thus narrowing the focus of many services and often undermining the relationships between professionals and patients. Challenging ideas for solving issues of public service qualities arise accordingly. Examples include the Welfare State, New Conservatism and the Third Way, including Co-Production.

2.3.1 Definition of Co-production

Boyle and Harris (2009) define Co-Production as delivering public services in an equal and reciprocal relationship between professionals, public service users, their families and their neighbours, such that both services and neighbourhoods become far more active agents of change.

Ostrom (1996, p. 1073) provides a widely accepted definition of co-production, as “the process through which inputs from individuals who are not ‘in’ the same organization are transformed into goods and services.” The definition has been narrowed with the term “institutionalized co-production”. Therefore, it explains service delivery through long-term and general relationships between professionalized

service providers in any sector and service clients, or other members of the community, where all parties make substantial resource contributions.

The limits of our resources, social problems, poverty, low level of trust, engagement and social infrastructure encourage people to promote what is called the “core economy” (Goodwin et al., 2003). This is an operating system that consists of family, neighbourhood, and civil society. Co-production suggests ways in which the community can rebuild and reinvestigate the core economy and realize its potentials. A further suggestion is that to rediscover human resources and remake social networks, public services need to be turned inside out. The system reduces demands on professionals and supports public services intervention to succeed (Boyle and Harris, 2009).

All in all, co-production involves strengthening the core economy of the neighbourhood and the family. Co-Production shows the following characteristics. First, it recognizes people as assets because people themselves are the most valuable resources of societies. Secondly, it values work differently, recognizing everything as work. The work that people do includes raising families, looking after people, and maintaining healthy communities, social justice and good governance. Thirdly, it promotes reciprocity: that is, giving and receiving. It helps to build trust between people and fosters mutual respect. Finally, it builds social networks because people’s physical and mental well-being depends on strong and enduring relationships (Cahn, 2001).

Co-production may happen at the individual, group or collective level, as shown in Table 2.1:

Table 2.1 People who participate in Co-Production (Brudney and England, 1983)

	Individual Co-production	Group Co-production	Collective Co-production.
Which citizens are producers?	Individual, family	Group of citizens	Group of citizens
Which citizens are beneficiaries?	Individual, family	Group of citizens	Wider communities
Examples	Expert patient programs Home-school contracts Recycling	Pooled budgets in social care (e.g. to purchase equipment or commission service) Neighbourhood watch. Walking buses for school children	School governors Time banks Communities' ownership of parks

Co-production can also happen on a more collective level when one individual's efforts are not enough to bring about the desired change. Besides the information mentioned in the table, non-profit organizations are one example of stakeholders in co-production. Many non-profit organizations provide social and human services where co-production is critical to client success. An example is the non-profit organizations that intervene in public education in the US. Some of these non-profit services include non-profit organizations providing tutors to people studying for the GED or teaching English as a second language to immigrants. Moreover, there are non-profit drug and alcohol rehabilitation programs and non-profits teaching children about recycling programs and taking care of the environment. In addition to direct service provision, non-profits can coordinate group and collective level co-production efforts. Non-profit organizations often focus on providing services to poor, underrepresented and marginalized groups. Because of this, we can expect more non-profits in communities with greater ethnic and cultural heterogeneity (Smith & Lipsky, 1993).

To clarify further the concept of co-production, it is important to mention aspects that are not considered co-production. First of all, we have to focus on users and professional roles in designing and delivering services. Communities or users organizing provision without involvement from public service professionals is not co-production. The table below shows more roles of users and Professionals:

Table 2.2 Users and professionals’ roles in the design and delivery of services.

		Responsibility for design of services		
		Professionals as sole service planner	Professionals and service users/ community as co-planners	No professional input service planning
Responsibility for delivery of services	Professionals as sole service deliverers	Traditional professional service provision	Professional service provision but users/ communities in planning and design	Professionals as sole service deliverers
	Professionals and users/ communities as co-deliverers	User co-delivery of professionally designed services	FULL CO-PRODUCTION	User/ community delivery of services with little formal/ professional involvement
	Users/ Communities as sole deliverers	User/ community delivery of professionally planned services	User/ community delivery of co-planned or co-designed services	Self-organized community provision.

Source: Boviard (2006, cited in Boyle and Harris, 2009).

To give more examples, co-production of educational service provision is a particular type of co-production. The literature on education services confirms that two uses of the concept of co-production are essential for a complete analysis of co-production in education. At the first level, the co-production function for education services requires input from traditional producers and traditional consumers. These are respectively teachers and students. Therefore, the first level mentions the student-teacher nexus and suggests that the active participation of students is necessary for learning. In this sense, if co-production is abandoned, the service will not occur. On a second level, other possible inputs deriving from parents, student peers, community organizations (private and public) and the media have impacts on the quality and quantity of education services. In this sense, these inputs add quality to educational services, but the service could be created even without the second-level service input (Galli et al, 2014).

In conclusion, co-production presents the following aspects. Firstly, it has the capacity to transform public services. Public service professionals need to be transformed from fixers to facilitators. In the same way, communities or users now become their equal partners. Public services and welfare systems should be delivered in ways that are likely to be more participative as well as more equitable. Secondly, co-production promotes equal participation. Everyone has the capacity to participate on equal terms. In addition, it fosters equal partnership between providers and users. Thirdly, co-production is essential to building sustainable public service. In terms of sustainability, co-production enables people, which are the most valuable assets, to develop, flourish and expand their capacities (Boyle and Harris, n.d.).

2.3.2 Past research regarding Co-Production

Victor Pestoff and Taco Brandsen (2009) argue that co-production is one of several mechanisms that help to increase and enhancing public service delivery. However, there are some discrepancies between co-production and innovation. The authors tried to differentiate the differences between the two terms by surveying the situation in many countries in Europe. Co-production exists in many countries and at many levels, depending on different government regimes. The statistics show more participation in democratic government than welfare regime. Welfarism and

professionalism do not leave much room for service users' participation. Consumerism and managerialism allow for users' choices in public services but leave little room for voice or participation. Participationalism encourages the most on-site participation. TSFEP project 5 (Pestoff, 2006, 2008) found different levels of parent involvement in various countries and in various forms of provision. For example, there are public, private for profit and third sector organizations. The highest levels of parent participation are found in third sector providers, like parent associations in France, parent initiatives in Germany, and parent cooperatives in Sweden. Moreover, with innovation, service providers become more hybrid. This gives sufficient autonomy and appears to take actions to reconcile the tension between market, state and community characteristics.

In Africa, the situation of co-production in public service seems positive. Popoola (2011) focuses on five critical social services: roads, water, electricity, health care, and education. The study presents an empirical analysis of co-production as a possible solution to poor and inefficient service delivery. The findings portray that co-production becomes inevitable to improve service qualities. Also, good governance is the valid exercise of power and authority by the government. In Nigeria, co-production is not a new phenomenon. While the budget is a major constraint, community-based organizations need to collaborate with their local and state governments, using synergy and co-production processes. The paper concludes that the solution for effective and efficient services in Nigeria is effective adoption and implementation of a collaborative approach between the government and community-based groups, particularly at the local level.

Parrado and colleagues (Parrado et al., 2013) emphasize Popoola's finding regarding the characteristics of the community or society. The more democratic a society, the more co-productive it becomes. Their study, "Correlates of co-production: evidence from a five-nation survey of citizens", examines definitions of co-production and conducts a survey of behaviour and attitudes to co-production in five nations in three broad policy areas: public safety, the environment, and health. Three key findings highlight the co-productive characteristics in public service provision. Firstly, it is likely to rely on the cultural and administrative context of a society. The better the performance of service provision from local or state governments, the less willing the

government is likely to be to co-produce these services. Secondly, different policy sectors seem to have a differentiated impact on co-production. For instance, policy areas in which service providers are highly professionalized, such as doctors, are likely to be less conducive to co-production. Finally, self-efficacy of the citizens is an important factor in co-production.

Jakobsen (2012) presents how government initiatives can increase citizens' input to the public services. The results illustrate that government initiatives can increase citizens' co-production. The citizens with the greatest need of services appear to show more interest in co-production. However, different types of government initiatives give different feedback on citizen co-production. Not everyone is affected or gives the same amount of citizen co-production. The suggestion encourages to study which are more likely to participate as the result of government initiatives. The following attributes are found: 1) Citizens may need some specific production skills or knowledge to provide positive co-production.(Alfors 2002; Levine 1984, cited in Jakobsen, 2012); 2) Citizens' co-production often increases if they have certain tools or facilities; 3) Citizens' co-production depends on the time they have available (Marschall 2004; Percy 1984; cited in Jakobsen, 2012).

Shuttenberg and Guth (2015) examine a framework to understand co-production and co-productive capacities. The authors draw on the literature on sustainability science and attempt to find a conceptual framework that specifies the sequential sources of co-productive capacities. They find that the potential sources of co-production capacities come from the following factors: firstly, from the existing individual and organizational capacities of science, traditional knowledge, management and governance. Secondly, the source of co-production capacities is from the broader social-ecological system (SES) in which knowledge co-production takes place. Finally, the third source of co-productive capacity is the knowledge that coproduction process itself. The research highlights leadership as an importance factor in the co-production. Co-production must shift stakeholder perceptions from narrow and self-focused views toward a more collective understanding of a sustainability problem. Moreover, the authors mention the adverse effect of the co-production process, which cannot be eliminated, namely power imbalance. This refers to the influence of power dynamics on the appropriateness and form of knowledge

integration. There are some privileges in power usage when it comes to implementation.

A paper named “Public services co-production: from users' engagement to the state 2.0” by Castelnovo (2015) uses co-production as the lens to look at citizens' participation in civic life. The results show that citizens' involvement can determine the transformation impact on the government. Citizens' participation is considered true participation when there is redistribution of power between government and citizens (Arnstein, 1969, cited in Castelnovo, 2015). Co-production is much more than customer or user involvement: it is a value-creating activity that challenges the traditional conception of value creation (Castelnovo, 2015). As a result, the transformational potential of the co-production model is magnified by the use of social media to increase citizen engagement in government activities (Leadbeater and Cottam, 2007; O'Reilly, 2010; Nam, 2012; Linders, 2012; Schuurman et al., 2012; Meijer & Thaens, 2013, cited in Castelnovo, 2015). The role of social media can contribute to the generation of public value through the design and implementation of user-generated services, which can provide public value. It is a challenge to government to undergo a profound transformation to embrace fully the reality of participation (ibid).

Fenwick (2012) surveys how participants in a co-production form of professional service – both practitioners and members of the community – negotiate decision-making and authority, mutual expectation, client relations and standard practice. The research adopts a socio-material approach to analyze these micro-practices. Fenwick disputes the current literature which suggests that co-production seems to be a universal model for all contexts in the UK. Furthermore, people seek to find idealistic imperatives that emphasize equal partnership (Boyle and Harris, 2009, cited in Fenwick, 2012). Finally, another problem is the assumption that co-production must entail a “transformation” of what already exists in professionals' relations with service users (Parker and Heapy, 2004, cited in Fenwick, 2012). A case study in policing service provision shows how negotiation involving co-production is a multi-faceted and often fraught form of practice. Moreover, it needs an action or platform that collects different qualitative forms of co-production in practice.

In the case of public library services, the study “Citizen Co-production and efficient public good provision: theory and evidence from local public libraries” by De Witte and Geys (2013) shows the approach to measure productive efficiency. Citizen co-production is crucial for defining inputs and outputs in product provision efficiency. The outcome shows that they are inappropriate to evaluate the pure production of public service provision. Also, they may lead to biased inferences. The research attempts to produce a valid estimate of public service providers’ technical efficiency.

Pouliot’s (2009) paper, “Using the Deficit Model, Public Debate Model and Co-production of Knowledge Models to Interpret Points of View of Students Concerning Citizens’ Participation in Socio-scientific Issues”, shows different approaches to attitudes, interests and capacity for understanding citizen participation. Methodologically, it aims to provide young people with the opportunity to position themselves as having the ability to demonstrate their views on the local and global techno-scientific issues that concern them. A group of three post-secondary and pre-university students are explored. In this case, the challenge involves how teachers may best mobilize the deficit, public debate, and co-production models to transform the use of teaching tools, and how students may use these models in learning artefacts (in the case of pupils; Brown, Collins & Duguid, 1989, cited in Pouliot, 2009). This enables students to structure themselves as relevant, legitimate and politically empowered citizen stakeholders (Roth & Désautels, 2004, cited in Pouliot, 2009).

In terms of education provision, Porter (2006), in a study titled “Impacts of New Strategies for the Delivery of Education Services on Institutional Arrangements”, presents a Strategy of Universal Competence that requires fundamental changes in the design of organizations delivering education services. Moreover, the research suggests that contingency design begins with a technical core and with satisfying needs of technology and its immediate task environment. Users of many public services are themselves important co-producers (Whitaker, 1980). Teachers cannot produce education without the co-productive efforts of students; police cannot produce public order without the co-productive efforts of citizens. Officers help to accomplish these tasks. They rarely produce the results themselves. The students and the parents, as much as the teachers, have an impact on the education that that pupil obtains. Teachers

might provide the best of lesson plans, instructional materials, and teaching techniques, but they cannot educate the child who will not learn.

Porter (2006) found that firstly, the provision of education services takes place at the connection between the student and the teacher. Secondly, a Universal Competence strategy mandates that a growing proportion of all students demonstrate proficiency in basic academic skills. Thirdly, the organizational boundary between a classroom and its immediate task environment is indistinct. A very practical result of the blending of classroom and task environment is that education services are of necessity produced in a very localized setting. Fourthly, the criteria for measuring the effectiveness of delivering education services are standardized tests that measure whether students have mastery of materials in the curricula (ibid).

Both Whitaker (1980, cited in Porter, 2006) and Alford (2002, cited in Porter, 2006) advocate citizen co-production under at least two situations. First of all, co-production adds additional value to a public service, but co-production is not essential to its production. Secondly, co-production is an integral part of producing a completed public service but a citizen/client may or may not choose to consume the service. The second situation fits the delivery of education services under an Opportunity to Learn strategy.

In the paper “Strengthening Knowledge Co-Production Capacity: Examining Interest in Community-University Partnerships” (Hutchins et al., 2013), it is shown that communication research can play a crucial role in providing more efficient research partnerships, especially those concerned with knowledge co-production processes. This article underlines community-university research partnerships and factors that influence participation in the co-production process. Using survey responses from a state-wide sample of Maine municipal officials, the authors conduct a statistical analysis of community-university partnership. It is interesting to test a conceptual model of partnership interest based in natural resource management theory and environmental communication. The findings both support and advance prior research on collaborations. The outcomes show that belief in the helpfulness of the collaborator to solve problems, familiarity and institutional proximity, perceived problem severity, problem type and trust have an impact on the interest in developing community-university partnerships (Ibid).

Another case study shows the involvement of parents and civil society in the governance of school meal services (Galli et al, 2014). The case of the school meal service in Pisa, Italy proves effective in demonstrating how co-production in school meal services happens in different phases of the school meal supply chain. The necessary connection between students, teachers and professional caterers is based on a wider co-production activity that takes place among public actors, parents, and market actors within an institutional body. They are the denominated Canteen Committee. Co-production in the school meal service takes place via a governing arrangement. This shows that the public authority directly engages with non-public stakeholders in a collective decision-making process that is formalized, consensus-oriented, and deliberative and that aims to make or implement public policy or manage public programs or assets. Co-production resulting from the combination of free and paid resources is a condition for welfare improvement. It is also a consequence of the impossibility of the public administration to respond by itself to the call for change that emerges from civil society (Ibid, 2014).

2.4 Synthesis of linkage among SD, ESD and Co-production

After the literature review, it is possible to group the concepts of SD, ESD and Co-production together in the following table. This reveals the repeated keywords which show the linkage among them.

Table 2.3 Characteristics of SD, ESD and Co-production (Author's table)

Characteristics of SD	Characteristics of ESD	Characteristic of Co-production
<p>A. A growing, self-supporting economy, (Lerner, 1968)</p> <p>B. Democratic participation in policy-making</p>	<p>a. Based on SD (UNESCO, 2006)</p> <p>b. All three spheres of sustainability – environment, society, and economy – with dimension of culture</p>	<p>I. Democratic characteristics of society are preferable to co-production (Pestoff & Brandsen, 2009)</p> <p>II. Needs of services increase co-production</p>

Table 2.3 Characteristics of SD, ESD and Co-production (Author's table) (cont.)

Characteristics of SD	Characteristics of ESD	Characteristic of Co-production
<p>(Lerner, 1968; Abeyasuriya, 2008)</p> <p>C. A culture oriented towards secular, rational norms. (Lerner, 1968)</p> <p>D. A comparative society equipped with personal freedoms: geographically, socially and intellectually mobile (Lerner, 1968)</p> <p>E. Intergenerational equity, gender, peace, tolerance, poverty reduction, environmental preservation and restoration, natural resource conservation, and social justice. (UNCED, 1992)</p> <p>F. A healthy and productive life in harmony with nature (Payutto, 1996)</p>	<p>(UNESCO, 2006; Johanesssona et al., 2011)</p> <p>c. Usage of a variety of pedagogical techniques and interdisciplinary approaches (UNESCO, 2006; Burmeisker and Eilks, 2013)</p> <p>d. Promotion of participatory learning and higher-order thinking skills (UNESCO, 2006, Johanesssona et al., 2011; Green, 2013)</p> <p>e. Life-long learning Education (UNESCO, 2006)</p> <p>f. Locally relevant and culturally appropriate (UNESCO, 2006; Johanesssona et al., 2011)</p> <p>g. Local needs, perceptions and conditions, but international effects and consequences, with global awareness (UNESCO, 2006, Johanesssona et al., 2011; Renner & Cross, 2008)</p>	<p>(Parrado et al., 2013)</p> <p>III. Specific knowledge or expertise are not favourable to co-production (Parrado et al., 2013)</p> <p>IV. Mutual benefits between providers and users (Porter, 2006)</p> <p>V. Concern with many stakeholders (Pouliot, 2009)</p> <p>VI. Co-production improves public service delivery (Popoola, 2011)</p> <p>VII. Good governance is the effective exercise of power and authority by government (Popoola, 2011)</p> <p>VIII. Synergy process, collaborative approach between the government and community-based groups (Popoola, 2011)</p> <p>IX. Self-efficiency of citizen is favourable to co-production (Parrado et al., 2013)</p>

Table 2.3 Characteristics of SD, ESD and Co-production (Author's table) (cont.)

Characteristics of SD	Characteristics of ESD	Characteristic of Co-production
<p>G.A healthy and productive life in harmony with nature (Payutto,1996)</p> <p>H.Equitable desire the developmental and environmental needs of present and future generations; (Yossatorn, 1999)</p> <p>I. Eradicating poverty and reducing disparities in living standards (UNCED, 1992)</p> <p>J. Mutual interest and reciprocal learning in the system of service provision (Wongthanavas, 2003)</p> <p>K.Encouragement of joint venture production of SD (Clark, 2013)</p> <p>L. Encouragement of third-party collaboration (Devereux, 2010)</p> <p>M. Local ownership, autonomy, accountability (Devereux, 2010)</p>	<p>h. Formal, non-formal and informal education engagement (UNESCO, 2006, Nnabao et al., n.d.; Pigozzi, 2010; Watanabe, 2013)</p> <p>i. Accommodates the concept of SD: Intergenerational equity, gender equity, peace, tolerance, poverty reduction, environmental preservation and restoration, natural resource conservation, and social justice (UNESCO, 2006)</p> <p>j. Interdependence, community engagement, cultivating the ESD and family involvement in ECE (Green, 2013)</p> <p>k. Alliance and partnership (Tsai, 2013; Watanabe, 2013)</p> <p>l. Technologies, software and hardware infrastructure in schools (Tsai, 2013; Watanabe, 2013)</p>	<p>X. Government initiative and media usage are favourable to co-production (Jakobsen, 2012)</p> <p>XI. Community involvement (Boyle and Harris, 2009)</p> <p>XII. At grass root level, co-production is more realistic (Popoola, 2011; Pace, 2010)</p> <p>XIII. Leadership and contingency approach (Shuttenberg and Guth, 2015)</p>

2.4.1 Synthesis of the main ideas of SD, ESD and Co-Production

From the table above, we can conclude that these three ideas share the interdisciplinary approach and the collaborative approach. Furthermore, they emphasize citizen participation to achieve their goal, namely a sustainable future for SD and ESD and public service efficiency for Co-production. Also, democratic participation shares common ground in implementing SD, ESD and Co-production. In a community, we need autonomy but interdependence in community administration to enhance the implementation of SD, ESD and Co-production. The meta-synthesis approach may help to simplify the similarities and differences among these three theories. The checklist below provides a simple synthesis of the essential attributes of the arguments by pairing the similar and synonymous keys.

Table 2.4 Synthesized keywords of SD, ESD and Co-Production (Author's table)

	SD	ESD	Co- Production
A. Self-reliance and self-efficiency of population	√	√	√
B. Democratic Participation	√	√	√
C. Cultural adaptation	√	√	√
D. Interdependence	√	√	√
E. Equitability	√	√	√
F. Goal of sustainable future	√	√	√
G. Healthy and productive life	√	√	
H. Harmony with nature	√	√	
I. Interdisciplinary approaches	√	√	√
J. Communities' engagement	√	√	√
K. Formal, non-formal and informal education	√	√	
L. Mutual benefits	√	√	√
M. Good governance			√
N. Collaborative approach and partnership	√	√	√
O. Technology and media usage	√	√	√
P. Leadership and contingency approach	√	√	√

2.4.2 Dominant themes as Indicators of Co-production of ESD

A. Collaborative approach and partnership

The Oxford Dictionary (online) defines partnership as “the state of being a partner” (www.oed.com). The partner can be a person or organization who shares or join another or others, in terms of, business, profit, risk sharing and so on. According to El Ansari and Phillips (2001), collaboration is the development of a model of co-planning, co-implementation, and co-evaluation between individuals or organizations. Therefore, the collaborative approach and partnership are closely related and both refer to partners joining together to develop a model of joint planning, implementation and evaluation to share both risks and profits.

Co-production suggests that public services and welfare systems should be delivered in ways that are likely to be more participative as well as more equitable. Moreover, co-production promotes equal participation. Everyone has the capacity to participate on equal terms. In addition, it fosters equal partnership between providers and users. Finally, co-production is essential to building sustainable public services. In terms of sustainability, co-production enables people, who are the most valuable assets, to develop, flourish and expand their capacities (Boyle & Harris, 2009). An example of co-producing public service in Nigeria shows that the solution for effective and efficient services is effective adoption and implementation of a collaborative approach between the government and community-based groups, particularly at local level (Popoola, 2011).

Similarly, Watanabe (2013) studies the implementation of ESD in Japan by looking at Kesennuma city. One of the findings about ESD implementation strategies is that it is important to establish partnerships with organizations outside of schools. Tsai (2013) proposes four strategies for the effective implementation of ESD in universities. The study is based on Taiwan Business Schools and their attempts to integrate ESD into their programs. The concept of SD, which aims to achieve a sustainable future, is encouraged to raise people’s participation. The research shows that in business schools, ESD is represented by the means to collaborate with corporations and society and to build a green university alliance.

Devereux (2010) mentions the growing interest in international development in the context of cooperation and international volunteers in developing a parallel growing issue to achieve SD. The research investigates the current international development context and the characteristics, contributions and recognition of foreign volunteers. All in all, the collaborative approach, partnership and synergy process should be one key to reach the goal of sustainability.

B. Community engagement

Community engagement is the process of working together with and through groups of people affiliated by geographic proximity, special interest, or similar situations in order to convey matters affecting the well-being of interested people. Partnerships and coalitions help to mobilize resources, influence systems and change relationships among partners. Community engagement, therefore, involves partnership of the people in the community, and it serves as a catalyst for changing policies, programs, and practices (Fawcett et al., 1995). It is important because it concerns the benefits of the people in the community themselves.

In the SD, ESD and co-production literatures, “Community Engagement” is the most common keyword. For example, Green (2013) explores five preschool teachers’ perceptions of Education for Sustainable Development (ESD) in Early Childhood Education (ECE). The most dominant themes are about interdependence, community involvement, cultivating ESD knowledge and family involvement. The community’s learning process enhances its ability to balance economic, social and environmental development in a sustainable manner (Auengpaibul, 2003).

Co-production suggests ways in which the community can rebuild and reinvestigate the core economy and realize its potentials. A further suggestion is that to rediscover human resources and remake the social networks, public services need to be turned inside out. The system reduces demands on professionals and support public services intervention to succeed (Boyle & Harris, 2009).

C. Cultural adaptation

Cultural adaptation involves “reviewing and changing the structure of a program or practice to more appropriately fit the needs and preferences of a particular cultural group or community” (Samuels et al., 2009, p. 7). Furthermore, it involves modification of service delivery at the administrative level to be consistent with the consumers’ culture.

Besides the administrative context, co-producing public policy tends to be based on the cultural attributes of the society (Parrado, et al., 2013). For ESD implementation, ESD is locally relevant. It addresses local as well as global issues, and uses the languages that learners most commonly use. Concepts of sustainable development must be carefully and meaningfully expressed in other languages because languages and cultures say things differently (UNESCO, 2006). There are seven characteristics that emphasize diversity and complexity in our world (Jóhannesson, et al., 2011). In adopting ESD policy, it is necessary to consider what the communities desire to happen in their environments. The social and economic features of the professional and economic situation cannot be ignored. Co-production by any stakeholders must not ignore the local context of those who are in need of the service.

D. Democratic Participation

Citizen Participation is one of the most basic signposts of a democracy. Participation is the key role of citizens in democracy. It is not only their right, but their duty. Citizen participation may take many forms, including standing for election, voting in elections, becoming informed, debating issues, attending community or civic meetings, being members of private voluntary organizations, paying taxes, and even protesting. Participation builds a better democracy

Modern Societies involve democratic participation in policies, culture oriented towards secular and rational norms (Lerner, 1968). In the co-production literature, the percentage of the population co-producing the public service depends on different government regimes. The statistics shows more participation in democratic governments than in welfare regimes (Pestoff & Brandsen, 2009). However, this outcome is likely to rely on the cultural and administrative context of a

society. The better the performance in service provision from local or state governments, the less willingness there is to coproduce these services (Parrado et al., 2013). In terms of sustainability, many studies show that it is necessary to encourage the principle of cooperation between stakeholders and the sustainability discourses emphasize democracy and involvement in decisions that affect them.

E. Equitability

Equitability is characterized by equity or fairness; just and right; fair; reasonable (Oxford Dictionary Online). In terms of public service provision, co-production is the delivery of public services in an equal and reciprocal relationship between professionals, public service users, their families and their neighbours. Both services and neighbourhoods become far more active agents of change (Boyle & Harris, 2009). The aim here is to achieve certain goals: that is, equitable desire to meet the developmental and environmental needs of present and future generations (Yossatorn, 1999). One such goal is the goal of fairness in the provision and use of public services. Another is to have a sustainable future.

From the definition of SD, sustainability is a broad idea that should be used to guide research in all of its facets. It is not a set of technologies (Graham-Tomasi, 1991). The definition refers to an issue of intergenerational equity (Norgaard, 1992). It involves calculation of the balance between present and future use of a resource or set of resources, as well as debate over the valuation of resources for different uses. ESD is a broad concept that introduces a distinctive orientation to many essential features of education. That is, all aspects include access, relevance, equity and inclusivity of education (UNESCO, 2006). Equitability, therefore, is a vital characteristic of co-producing ESD.

F. Goal of sustainable Future

People wish to have a better future. Therefore, the necessity of development is required to secure the needs of the present without compromising the capacities of future generations to respond to their needs. In each community, the issue has to be the main focus in various aspects: economic, environmental and social. As a result, equitable desire for the developmental and environmental needs of present and

future generations is one aim (Yossatorn, 1999). Co-production may be a process. It can shift stakeholder perceptions from narrow, self-focused views toward a collective understanding of a sustainability problem (Schuttenberg & Guth, 2015). Many studies in the SD literature emphasize the importance of Sustainable Future. Even the co-production approach expresses the ultimate goal of equity and fairness in service provision to achieve sustainability. It is all about the careful management of resources so that there are enough for future generations.

G. Interdependence

The main characteristics of interdependence show that, first of all, interdependence expresses primarily the interconnectedness among actors, resources and/or tasks (Blau, 1964; Pfeffer and Salancik, 1978). Interdependence is also an enabler for the law of certain institutional arrangements in the public sphere (Rethemeyer and Hatmaker, 2008). Finally, and perhaps most importantly, interdependence appears as both a cause and a consequence of collaboration and cooperation among agencies and organizations (Hillman, Wheters and Collins, 2009)

Other studies of SD, ESD and Co-production show other dominant themes, namely interdependence, community involvement, cultivating ESD knowledge and family involvement (Green, 2013), as well as mutual interest and reciprocal learning in the system of service provision (Wongthanavas, 2003). Schools and their environment depend on other institutions in order to maintain and improve their services. For example, schools have to rely on the families of their students to cooperate with the teaching and learning systems. Meanwhile, their families hope that the school will help them with their children's education and mentoring. In Thai societies, there is a special link among three institutions, namely schools, families and temples (Bor Worn). This witnesses the importance of Interdependence.

H. Interdisciplinary approaches

The Executive Director of the Association for Integrated Studies, William H. Newell and William Green (1982), define the interdisciplinary approach as "inquiries which critically draw upon two or more disciplines and which lead to an integration of disciplinary insights" (cited in Haynes, 2002, p.17).

According to UNESCO (2006), one of the seven essential characteristics of ESD is the interdisciplinary approach. In addition, interdisciplinary and holistic learning for sustainable development must be embedded in the whole curriculum. The policy maker should not set ESD as a separate subject. Burmeister and Eilks (2013) suggest that all ESD focus on the orientation of education around societal issues. The use of an interdisciplinary approach and changes in pedagogy far exceed the mere rearranging or altering of curricula (Paden, 2000, cited in Burmeister and Eilks 2013). ESD approaches demand implementation of a skills-oriented teaching paradigm to promote education for sustainable development which goes beyond education *about* sustainable development (McKeown, 2006, cited in Burmeister and Eilks, 2013). Technologies, software and hardware infrastructure in schools should be a supportive system for the policy to accomplish sustainability (Watanabe, 2013). Moreover, government initiatives and media usage are favourable to co-produce public services, including ESD (Jakobsen, 2012).

I. Leadership and contingency approach

A leader is someone who selects, equips, trains, and influences one or more followers who have diverse gifts, abilities and skills and focuses the followers on the organization's mission and objectives. This may cause the followers to willingly and enthusiastically expend spiritual, emotional, and physical energy in a concerted, coordinated effort to achieve the organizational mission and objectives (Winston and Patterson, 2006). Meanwhile, the contingency approach may be summarised as follows: "the best way to organize depends on the nature of the environment to which the organization relates" (Scott, 1992, p. 89). Contingency theory has two basic underlying assumptions: firstly, that there is no one best way to organize, and secondly, that not all ways of organizing are equally effective (Galbraith, 1973).

Leadership is dominant keyword found in the literature. According to Shuttenberg and Guth (2015), this shows the importance of leadership to the co-production of public services. Meanwhile, Suwanich (2008) suggests that the leaders of the communities are the one who put forward the community-based policy.

Leadership and the contingency approach are outstanding in the cycle of community policy-making.

J. Mutual benefits

“Mutual benefit” specifically means that each partner shares in the benefits that the activities provide. In terms of education provision, O. Porter (2006) presents a study titled “Impacts of New Strategies for the Delivery of Education Services on Institutional Arrangements”. Users of many public services are themselves important co-producers (Whitaker, 1980). In some political areas, the political system is the primary mover of policies, such as the family planning program. In the same way, the benefits of the policy feed back into the political system to increase political support and thus to “sustain” the program (Wongthanavas, 2003).

K. Self-reliance and self-efficiency of population

Self-reliance and self-efficiency of the population are good qualities that are expected to appear in societies in which the co-production of ESD is needed. Self-efficacy is an important factor in co-production (Parrado, et al., 2013). Self-reliance and self-efficiency of the population can be defined as people’s ability to rely on themselves in terms of economic and social aspects. In political terms, they are efficient in committing their duties as members of the society. Moreover, self-reliance and self-efficiency of the population are supposed to be characteristics of modern society in some ways. A self-supporting economy can lead to sustainability in modern society (Lerner, 1968). It is the leaders of each community who give knowledge and encourage the local community’s responsibility. The process focuses on social development and community self-reliance, which leads to a better environment for developing countries (Moohamud, 2013).

L. Technology and Media Usage

Watanabe (2013) emphasizes that building support systems is another means to achieve SD, while Tsai (2013) recommends integrating the “Green Schools” concept with the construction of hardware and software in business schools. The implementation or co-production of policy may need some special devices, while

citizens may need specific production skills or knowledge to provide positive co-production (Alfors 2002; Levine 1984, cited in Jakobsen, 2012). Furthermore, citizens' co-production often increases if they have certain tools or facilities. We can conclude that technology and media usage are favourable to co-producing ESD.

The findings from the checklist give a significant key to further investigation of co-production models of implementing ESD policy in Thailand. However, the author asserts that these correlated indicators share common attributes but they are different. Some can be put into the input of the implementation cycle; however, some should be considered as part of the process portion of the cycle, and others as output. Therefore, the key characteristics listed in the literature may be categorized into a table as follows:

Table 2.5 Process of co-producing ESD with indicators (Author's table)

Characteristics of Co-producing ESD	Keywords/ indicators	Remarks
Input	<ul style="list-style-type: none"> . Self-reliance and self-efficiency of population . Democratic Participation . Equitability . Leadership and contingency approach . Interdependence 	Leadership may be considered to exist in "Input"
Process	<ul style="list-style-type: none"> . Cultural adaptation . Interdisciplinary approaches . Community engagement . collaborative approach and partnership . Technology and media usage . Leadership and contingency approach 	Contingency approach may be considered to exist in "Process"
Output	<ul style="list-style-type: none"> . Goal of sustainable future . Mutual benefits 	

The key data will be processed and discussed further in Chapter 3, which focuses on Methods and Materials.

CHAPTER III

RESEARCH METHODOLOGY

The thesis is concerned with the practices of co-production in public service provision. The research aims to study the implementation and co-production of ESD in Thailand. The hypothesis is whether co-production from any other stakeholders in education may help to support and enhance education in Thailand. The concepts of “sustainability”, “SD” and “ESD” are contested, meaning that they have no exact definition. In practice, they require interpretation from the local contexts. There appear to be gaps in interpretation between the policy-makers and those who implement and co-produce the policy.

The research is based on the belief that the means of successfully achieving a sustainable future for all is to mobilize the actions of all parties to commit to the responsibilities to sustain the resources of the nation. Co-production theory is considered to be one way of implementing ESD in order to accomplish these goals. It is a challenge to policymakers in terms of reforming public service by encouraging users to design and deliver services in equal partnership with professionals. Somphone (2007) confirms that ESD should begin at an early age. Therefore, this research focuses on the basic education unit in Thailand, to which all people have access by law. The research is designed to investigate the implementation of ESD policy in Thailand with an emphasis on implementing models of co-production of ESD policy in the basic education sector. In other words, this research aims to examine the important factors contributing to the co-production of ESD policy in Thailand.

The objectives of this research are to analyze the theories and to develop implementation models of ESD policy through the co-production approach. The researcher uses a multi-case study and qualitative research methods to study this social phenomenon. Furthermore, the research provides a study of an implementation policy model of education management in community schools or local administration units

for sustainable development. The process of the research comprised three stages as follows:

The first step involved document research. In this step, the researcher studied secondary data regarding theories, definitions of SD, ESD, and Co-production. Moreover, current phenomena concerning the United Nations' SDGs and UNESCO's ESD policy in global and local contexts were taken into account. The second step was field research. In this step, the multi-case studies were selected by means of a pilot study. Then, the researcher applied in-depth interviews and non-participatory observation to collect relevant data at the selected locations. The final step was the data analysis and model development. The researcher used qualitative content analysis and descriptive qualitative methods with the help of NVIVO 11 software for coding and rearranging the significant data. Easton's system model of implementing policy in the policy science field was adapted to develop a model of implementation and co-production of ESD in Thailand.

3.1 Research Design

3.1.1 Step 1: Document research

The researcher studied secondary data regarding theories, definitions of SD, ESD and Co-production. These materials included, for example, textbooks, articles, policies, reports, executive summaries, past research, mass media, videos and websites, which were used to understand the concepts of SD, ESD and co-production. Moreover, current phenomena concerning the United Nations' SDGs and UNESCO's ESD policy in global and local contexts are also taken into account. The fundamental data studied consist of:

1. Definition and Theory of SD, the United Nations' SDGs, the adoption and implementation of SDGs in Thailand, contemporary Thai National Economic and Social Development Plans and the relevant past research.
2. Definition and Theory of ESD, ESD policy implementation in Thailand, National Education Acts, the structure of Thailand's educational decentralization and the relevant past research.

3. Definition and theory of co-production and the relevant past research

4. Policy sciences theory, which is used to understand the process of policy formulation and policy implementation. This is useful in developing the further conceptual frameworks in the next step.

The data from points 1, 2 and 3 above were analyzed and synthesized in order to find the common basis of these three concepts. This process yielded the twelve contributing factors used to develop a conceptual framework and research tools in the further steps.

3.1.2 Step 2: Field research

In this step, field research is necessary to explore and investigate the social phenomena involved in co-producing ESD using a multi-case study. The researcher selected three cases from the pilot study and the checklist, which were used to study the phenomenon and model of co-producing ESD policy in each school. The schools are the basic education units under the OBEC, which is responsible for the provision of the national basic education service. The multi-case method is better for triangulation and validation of the findings than a single case study. Afterward, the researcher explored the cases using document study, non-participatory observation and in-depth interviews with the key informants, who are educational provision stakeholders in the schools, in order to collect data for the third step.

3.1.2.1 Case selection

The researcher chose the area of study using purposive selection. The criteria are that 1) They are public schools under the OBEC; 2) They are small-sized schools; 3) They clearly show the aspects of implementation and co-production of ESD with the twelve indicators involved in their activities. The selection criteria involved two steps.

The first step in selection was based on document research. The researcher examined documents, past research and secondary data. Many government/non-government organizations and profit/non-profit organizations have programs for rating and rewarding administrative units for “Best Practice” in different aspects of administration. The researcher selected three schools from each region and

applied a pilot study to undertake preliminary case-by-case investigation using a checklist (Table 3.2). Snowballing was used on occasions. A total of twelve schools were selected. The following selection criteria were used:

1. They are awarded “Best Practice” or “Best Model” for community or school education management, or Best Practice in any area regarding SD, ESD and co-production from other stakeholders.

2. They are outstanding in the rich and diverse cultures in their regions. As these cases will represent interesting cases with regard to the implementation and co-production of ESD, different cultural and traditional aspects should be considered. Moreover, ESD is culturally relevant. These aspects have to be taken into account.

3. They meet the common basis of SD, ESD and co-production theories found in Chapter 2. To clarify, the cases show these features in their characteristics:

- a) Collaborative approach and partnership
- b) Community engagement
- c) Cultural adaptation
- d) Democratic participation
- e) Equitability
- f) Interdependence
- g) Interdisciplinary approaches
- h) Goal of sustainable future
- i) Leadership and contingency approach
- j) Mutual benefits
- k) Self-reliance and self-efficiency of population
- l) Technology and media usage

The selection results in twelve schools, as displayed in the table below:

Table 3.1 List of the pre-selected schools (Author’s Table).

Northern Area	Central Area	Northeastern Area	Southern Area
C.1. Bansankong School, Mea Rai, Chiengrai	C.4 school of LAOs of. Aomyai, Nakorn Pathom	C.7 Chumchonban koksawai school, Nakornratchasrima,	C.10 BaanNabon School of Phuket City Municipality, Phuket
C.2 Ban Muang Kued school, Mae Tang, Chiengmai	C.5 Wat Sompouathong School, Supanburi	C.8 Bannarai, school, Nakornratchasrima	C.11 Muang Phuket Municipal School, Phuket
C.3 Mea-ai Wittayakom, Chiengmai	C.6 Banthayae School, Kanchanaburi	C.9 Chumchonndaeng school, Nakornratchasrima	C.12 Bantungrakchaipat School, Phang Nga

3.1.2.2 The selection was to narrow down the selection to four cases. One school was selected from each part of Thailand. The criteria were as follows:

1) Pilot study: the researcher travelled to the twelve areas of study to undertake preliminary observation and collect basic data regarding geographic features, social conditions, professions, financial statements for the population, natural resources, transportation etc.

2) Checklist: the researcher used the checklist below to find the most outstanding and suitable communities/schools. The criteria to select cases in this step were based upon theoretical and individual aspects. The highest rated school from each area was selected. If more than one school shared the highest score, the opinions of external experts were sought.

The table below shows the checklist used for case selection:

3.1.2.3 Case Selection Results

The researcher finally selected three schools as case studies: Bansankong School, Chiang Rai, Banthayae School, Kanchanaburi, and Bantungrakchaipat School, Phang Nga. These schools were selected because they showed most of the features and criteria in the checklists. The selection did not include a school in the north-eastern area because the cases in that area gained lower scores and showed few differences from the selected cases in terms of attributes.

3.1.2.4 Key informants Selection. The author used purposive samplings from the list of key informants provided by school directors and community leaders. The researcher selected representatives of each different group of ESD implementation and co-production stakeholders, and then contacted them in advance to ask for interviews and sent them the interview guidelines. Consequently, the researcher conducted in-depth interviews with the informants to collect data for further analysis.

3.2 Research methodology and research tools

3.2.1 Research Methodology

This study explores the event of the current co-producing ESD policy in communities. It is thus necessary to study special features and attributes of each community using the following methods:

1) Document research

This approach was used to search for the basic information about each community regarding physical and geographical aspects. Moreover, social attributes and activities such as professions, social gatherings and community activities were recorded. The current public service provision from governments, especially education provision, was also studied. Finally, community leaders' biographies were taken into account, if available.

2) Non-participatory observation

The researcher used non-participatory observation to investigate formal and non-formal education provision in the schools. Moreover, the researcher observed how families and communities co-produce education and learning processes in the communities. The observation included conversations, actions and reactions to schooling the children, and active participation of the population, the outcomes of the activities, etc.

3) In-depth Interviews

The researcher interviewed key informants who were stakeholders in coproducing ESD using both formal and informal interviews. This process was used to seek new and significant data that did not appear via the first and the second research methods. The key informants were, for instance, the school headmasters, community leaders, students' families, and representatives from non-profit organizations and private sectors. Both purposive sampling and snowball sampling were used to recruit informants.

3.2.2 Research Tools

1) The researcher

The researcher as a tool studied the primary and secondary documents. Additionally, the researcher observed physical and non-physical features of communities and their co-production in public service provisions. Finally, the researcher conducted interviews with the informant stakeholders. Such research methods have to be conducted without bias in order to collect the true data.

2) Observation guidelines

The guidelines include 1) physical and non-physical features of communities; 2) their co-production in public service provisions: how families, communities and other private sectors co-produce education and learning processes in the communities. The observation included conversations, actions and reactions to schooling the children, and active participation of the population. Finally, 3) the outcomes of the activities were detailed in the guidelines.

3) In-depth interview guidelines

The researcher prepared the interview guidelines in advance to allow detailed investigation of in-depth information on the twelve contributing indicators. The researcher checked the key informants' perceptions and opinions of each indicator and recorded the interviews for further analysis.

3.3 Step 3: Data Analysis and Model development

3.3.1 Data analysis

3.3.1.1 Qualitative Content Analysis

Mason (1996) mentions that there are three possible approaches to content analysis, namely the literal, the interpretive, and the reflexive approach. The literal approach is a focus on the exact use of particular language or grammatical structures, for instance. Meanwhile, the interpretive approach involves the researcher making his/her own interpretation of the data. Finally, the reflexive approach attempts to focus attention on the researcher and her or his contribution to the data creation and analysis process. Whichever of these three possible approaches is used by researchers, they will have a choice of using either manual and/or computer-assisted methods in their data analysis. In the same way, the thesis applied all three approaches. Moreover, NVIVO Software 11 was used to help in structuring the data and arranging them, with coding being used to check the frequencies of each contributing factor. Then, the data were analyzed and described in the final chapters.

3.3.1.2 Qualitative Descriptive Method

The research is about context, process and procedure, together with the idea of conceptual thinking, receiving and sharing knowledge and perception. Therefore, the Qualitative Descriptive method is used, together with Qualitative Content Analysis and a synthesis of policy science theories, SD, ESD and co-production theories and relevant theories to study the research questions.

3.3.1.3 Triangulation

Researchers often rely on triangulation or the use of several kinds of methods or data. Denzin (1989) identifies four basic types of triangulation: 1) Data triangulation: the use of a variety of data sources in a study; 2) Investigator triangulation: the use of different researchers or several evaluators; 3) Theory triangulation: the use of multiple perspectives to interpret a single set of data; and 4) Methodological triangulation: the use of multiple methods to study a common problem. In this research, data and methodological triangulation were used in the process of data collection to increase the reliability of the data.

Data triangulation in this research was applied when collecting data. First of all, the respondents were selected from different groups of stakeholders in the implementation and co-production of ESD. They were school administrators, families and communities, volunteers, non-profit organizations and private sectors. Thus, the perceptions of different groups of people were triangulated in each case study. Furthermore, the interviews took place at different places. Most took place at schools; however, the researcher also went to some respondents' houses or other places outside the school environment to assess whether the interview location changed the answers toward the twelve indicators. The research reveals that the location had no effect on the stakeholders' perceptions towards ESD.

Methodological triangulation was also applied in this research. The researcher mainly conducted in-depth interviews, but non-participant observation was also used to scrutinize the respondents' answers. Moreover, the researcher observed the environment and the activities outside and inside the classrooms.

3.3.2 Data Transcription

3.3.2.1 Case study 1: Bansankong School, Chiang Rai

A total of ten in-depth interviews were conducted. The respondents were stakeholders in co-producing ESD at Bansankong School: two people were from the school administration, two were from families and the community, one was from the local authority, and the other five were from other institutions and volunteers. Respondents were coded as follows:

Table 3.3 Codes of respondents of Bansankong School (Author's table)

Interviewees	Codes
School 1	ST1SC
School 2	ST2SC
Families and communities 1	ST3FC
Families and communities 2	ST4FC
Local authorities	ST5LA
Other (Association)	ST6O
Other Volunteer 1	ST7O
Other Volunteer 2	ST8O
Other Volunteer 3	ST9O
Other Volunteer 4	ST10O

3.3.2.2 Case study 2: Banthayae School, Kanchanaburi

A total of eight in-depth interviews were conducted. The respondents were stakeholders in co-producing ESD at Banthayae School, Kanchanaburi: one person was from the school administration, two were from families and communities, two were from local authorities, and the other three were from other institutions and volunteers. Respondents were coded as follows:

Table 3.4 Codes of respondents of Banthayae School (Author's table)

Interviewees	Codes
School 1	TY1SC
Families and communities 1	TY2FC
Families and communities 2	TY3FC
Local authorities 1	TY4LA
Local authorities 2	TY5LA
Other Volunteer 1	TY6CF
Other Volunteer 2 (Association)	TY7O
Other Volunteer 3	TY8O

3.3.2.3 Case study 3: Bantungrakchaipat School, Phang Nga

A total of eight in-depth interviews were conducted. The respondents were stakeholders in co-producing ESD at Bantungrakchaipat School, Phang Nga: one was from the school administration, two were from families and communities, two were from local authorities, two were from other institutions and volunteers and another one was from the private sector. Respondents were coded as follows:

Table 3.5 Codes of respondents of Bantungrakchaipat School (Author's table)

Interviewees	Codes
School 1	TR1SC
Families and communities 1	TR2FC
Families and communities 2	TR3FC
Local authorities 1	TR4LA
Local authorities 2	TR5LA
Other Volunteer 1	TR6O
Other Volunteer 2	TR7O
Other Volunteer 3 (Private sector)	TR8PC

Each interview lasted 30 – 60 minutes and was conducted either at the school or at respondents' homes. The interviews were semi-structured in nature, allowing a structure to be followed but also for flexibility for probing and follow-up questions to be asked when necessary. During the interviews, the authors recorded the conversations, and then the records were transcribed into Microsoft Word and processed by NVIVO 11 software.

3.3.2.4 Conceptual Framework: summary of the study steps.

The researcher adopted Easton's political system model to develop a framework to study the cases. The input shows the important features from the government to feed into the process of implementation. The Process is what the research is seeking. The research uses the linkage of SD, ESD and co-production as keywords to identify the model for implementing ESD in different cases. The output varies depending on the objectives of ESD in each case study. Furthermore, the research assumes that the implementation processes of each case will be different as well. The framework, as summarised in the figure below (Figure 3.1), provides the formal guidelines to conduct the field study and develop research tools.

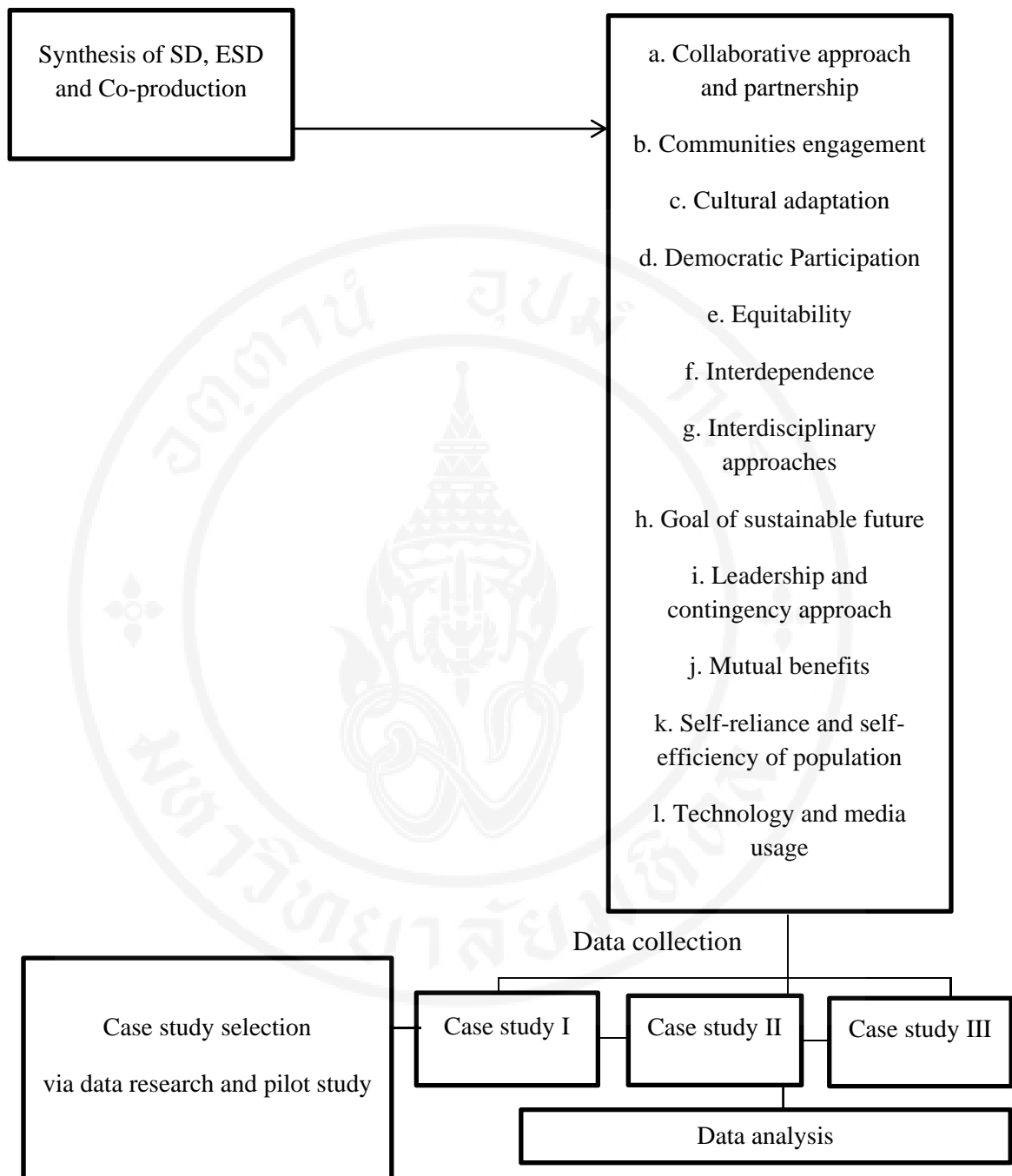


Figure 3.1 Summary of the study steps (Author’s figure)

CHAPTER IV

RESULTS AND DISCUSSION

CASE STUDY I, BANSANKONG SCHOOL

In this chapter, the researcher will discuss the first case study, which is Bansankong School in the Chiang Rai province of Thailand. The chapter is divided into three parts: the background and history, the research results and the discussion of the case study. The first part of the chapter sets out the background of the school, including its history, management and ESD practice. The school was chosen to be a case study because it shows most of the ESD attributes that the researcher is looking for. Additionally, it is one of the pilot schools in implementing ESD in Thailand. The second part presents the in-depth information from the interviews, with the aim being to cross-check with the twelve contributing factors that show linkages among SD, ESD and co-production. The data are presented in the form of text, graphs and tables derived using NVIVO 11 software.

The third part of the chapter discusses the significance of the indicators. The researcher adapts Easton's system theory to form a framework to analyze the data. The indicators are put into graphical form, namely input, process and output. Then, the data are structured and processed in terms of their significance to the case study. When studied in relation to the background in the earlier section and the literature review in Chapter II, the research finds a result or model of the implementation and co-production of ESD in case study I. Therefore, it is necessary to start the chapter with all the important background of the Bansankong School and the importance of the school as a case study of ESD implementation.

4.1 Research results for case study I: Bansankong School, Chiang Rai, THAILAND

Bansankong School is situated in Chiang Rai province, in the North of Thailand. It is one of the pilot schools of ESD policy implementation in Thailand. In this school, the learning system is based on a seven-step character and community-based learning. Baan San Kong School is located in a zone where there have been various problems, including poverty, the spread of drugs and HIV/AIDS, and a great diversity of hill tribe populations. Some social capital and economic situations have been rather weak due to low literacy rates and the struggle to understand diverse ethnicities and customs (Tahami, 2009).

The school is located in Tumbon Mae rai, Auphur Mae chan, Chiang Rai province. It is a medium-size school with an average of four hundred students and twenty teachers. The school covers 21.3 Rai (8.42 Acre) and its classrooms are housed in three two-storey buildings. The school has multi-function fields for sport and other activities in the middle of the u-shaped plan of buildings and more fields at its rear for agriculture. In the area surrounding the school, there are Akha villages: the Akha are an indigenous hill tribe living in the hills and elevated areas in the border areas of Thailand. Under the Doi Tung Initiative Development Project, which aimed to help solve the problems of deforestation in the Doi Tung area, the land allocation to these Akha people made them move down to the plain area in Mae Chan district. These people send their children to school; however, they are not interested in the school's activities or their children's education due to the language barrier. Moreover, they face social problems such as poverty, drugs, and prostitutions.

The school was first built in 1932 and in 1994 the school became an opportunity extension school for the hill-tribe students and underprivileged students. It started with two hundred students, and this number gradually increased because more Akha families moved down into this area. This caused the school problems in its education management, such as a shortfall of teachers, classrooms, facilities and buildings at that time. It initially struggled with its education management, but thanks to collaboration from the communities and external agencies, together with the efforts of the teachers and leader, the situation improved.

The attitude and mindset of the children are so important as they move into society that the school has been attempting to set them on the right path from the start. It has to deal with the reality of northern Thailand. It is a public school with free tuition. Almost 80% of the students are from hill tribes, mainly Akha, and the rest are from the poor families in this zone. Moreover, this district adjoins the border of Myanmar and the school sometimes has to receive children who migrate from Myanmar to Thailand. At one point, the government focused on the unification policies towards the hill tribes who repeatedly migrated between countries. The promotion of settlement was the core strategy used to force the hill tribes to change their unique lifestyle, which was based on slash-and-burn agriculture. The diffusion of Thai public education for these children was still missing some points, and problems remained in the community. More was needed so that these children could make use of education to make their lives and surroundings more sustainable. The emergence of ESD introduces a new form of learning to the education provision at Bansankong School.

Most of people in the area are poor; however, the lands are fertile and suitable for farming. The communities around the case study school collaborate well with the school. Most of them are involved in agriculture. The main problem in the area, besides poverty, is drugs trafficking. For these reasons, the children in the area are at risk. One of the advantages of this case study school is the consistency of its policy implementation. The headmaster has worked at the school for twenty years as well as most of teachers have taught at the school for long time. This means that any policies implemented at the school are consistent and he has a long-term plan to act and measure the policy outcomes. The school leader has gained a lot of faith and respect from many people and has thus drawn many collaborations and co-productions to the school. This includes the collaboration with ACCU to adopt the ESD policies, which have a broadly similar framework to the activities that the school has undertaken for many years. This is the community-based learning method. The school adopts school-based learning for the kindergarten to Pratom 3 (Grade 3) and community-based learning for Pratom 4- 6 (Grade 4 – 6).

A learning process that involves examining and creating society was adopted and implemented in the school. It is called “CSA”, short for “Case Study Approach” and was introduced by the ACCU-UNESCO Asia Pacific Innovation Programme for ESD. Its purpose is that children are able to engage themselves with their environment and to gain the capacity to resolve their own problems. The process is that the students are divided into study groups and work through the following seven steps: 1) Discovering issues in their communities; 2) Narrowing down priorities that are possible to address; 3) Making a presentation to the school or the community; 4) Searching for alternative solutions; 5) Creating an action plan; 6) Implementing the plan; and 7) Measuring and evaluating the outcome (Tahami, 2009). It is more than mere knowledge transfer from teachers to students. The students create their own knowledge through learning activities and ultimately gain the ability to recognize and solve problems, creativity, and higher order thinking skills (Ibid, 2009). The process of learning occurs through co-production with members of the community.

Civic participation in education provision is obvious in the case study school. The approach is concrete and open to evaluation. Moreover, the activities create life skills and incomes for the students. The objectives of life skill formations are, for example, to create critical thinking, creative thinking, team working and relationship making in the community. These skills are essential for their future professions. The incomes are from the products that the students and teachers produce during lessons. The students’ competencies are developed for their lives after school. These skills are useful to enable students to improve themselves, and also to improve their societies. They result from the engagement of many agencies and appropriate student-centred learning. All in all, they form the basis for ESD and students’ future life-long learning (Kanittha Keurchake, <http://www.obec.go.th/news/24826>)

The most important features that encourage ESD are the engagement from the school, families, and communities to manage the students’ learning process. The community is a good resource where the students can achieve lifelong learning. Moreover, it provides some knowledge that is not available in books for children, such as local wisdom about traditional local herbs. Finally, the community itself can adopt the process in practice and in their work. It makes both formal and informal

education more sustainable (Chuleeporn Aramnet, <http://www.moe.go.th/moe/th/news/detail.php?NewsID=29604&Key=news11>)

Co-production from the Bansankong School neighbourhood stands out at one level; that is, from a group of people in the community who are the representatives of families, parents, local authorities, and local citizens. Moreover, private corporates and non-profit organizations are involved in the co-production of education. This co-production might involve individuals or more collective groups of people. Co-production from the members or groups of people can occur, depending on who co-produces the education. Furthermore, the effects of co-production are examined through three dimensions: citizens' ability to co-produce in terms of having specific knowledge relevant for their input, their level of co-production, and their use of the supplied co-production materials (Jakonsen, 2012).

First of all, family co-production in Bansankong School is shown to be important to the case study. In general, family co-production is considered to be at the second level. This means that the education can happen even without this type of co-production. The first level of co-production – the co-production of the students themselves – is sufficient to complete the co-production (Galli et al, 2014). However, the second level of co-production can improve the service quality. Especially in the co-production of ESD, which includes community engagement as a contributing factor, co-production from the second level seems to be indispensable. At Bansankong School, most of the students' families co-produce ESD by co-delivering the professional service plan. The school's academic activities are both routine and occasional. At the first level, the families generally commit to the school's assignments in ensuring that the children complete their homework. At the second level, the families contribute their knowledge and co-produce the education. In the case study, the families were found to share their knowledge in agriculture, give labour to prepare lessons, and then co-produce lessons when their knowledge is required.

Community co-production shifts from an individual to a more collective group of people who co-produce the education service. 'Community' here means the people who live in the area surrounding the school and who are direct and indirect stakeholders in the education service provision in the area. Community may apply to

other institutions, such as monks and temples. At Bansankong School, the community is involved in planning some services with the school in the form of representatives. The school requires community representatives to be members of its administration team. They plan and implement policies within the remit of the national education acts. ESD is a policy that the board accepts and implements in the school. In addition, the community has to comply with the ESD activities and collaboration because it is the community itself that is directly involved with projects and is the beneficiary. Citizen participation is necessary in this regard and the case study clearly shows community collaboration.

The researcher also observed co-production coming from other local government agencies in the form of contributing knowledge and sharing the supplied co-production materials. For example, Chiang Rai Provincial Fisheries Office gave the school various breeds of fish to serve as material for fishery classrooms. Moreover, they came to give a lecture to teachers and students to enable them to accomplish their activities and let the students make the most use of them. Another example of a government agency that co-produces the education service is the Non-Formal Education Unit. This organization collaborates with the school in giving lectures on career formation. This co-production from the government agency involves sharing special knowledge to succeed in ESD goals. The level of co-production here is the co-delivery of professional service plans. However, some governmental agencies may take a higher step in co-production; that is, the co-planning of education service provision. For example, the Local Unit Administration may co-plan the education, sending a representative to sit on the school administration board. Moreover, they co-plan some activities like school milk provision or occasional special projects.

Finally, the case study revealed additional co-production from other stakeholders such as non-profit organizations and private companies. For example, the Immanuel Foundation (Baan Immanuel), which is a religious institution under the Christ's Kingdom, collaborates with the schools to take care of Akha students, accommodate them in dormitories and provide them with necessities such as education and food. Some students are orphans but others are from hill tribe families who live too far away from the school. The foundation becomes their new home and takes responsibility for raising them. Another example of various types of stakeholders co-

producing the education involves private companies. The research notes many corporates co-producing education by sharing knowledge and donating co-production materials. In these sectors, the contribution of the supplied co-production materials is more outstanding. CAT Telecom, for instance, donated an amount of money to build a library and supply it with computers and internet access to enhance the school's education facilities. These examples provide an overview of the co-production of education happening in the case study.

The case study fits the criteria of the case selection in most aspects. Bansankong School was chosen to study in depth the key contributing indicators which facilitate the success of ESD. To check the twelve indicators derived from the literature review, the researcher conducted in-depth interviews with representatives of the groups co-producing ESD policy with the school. Data from these interviews are presented in the following section.

4.2 Result of case study I: Overview of the significance of each indicator

This section presents the data derived from the interviews, which aimed to cross-check the twelve indicators: that is, the collaborative approach and partnership, community engagement, cultural adaptation, democratic participation, equitability, the goal of sustainable future, interdependence, interdisciplinary approach, leadership, mutual benefits, self-reliance and self-efficiency of the population, and technology and media usage. The interviews were recorded and then transcribed into textual form. In this chapter, the data are presented in the form of texts, graphs and tables derived using NVIVO 11 software. This section starts with an overview of the significance of the indicators and then describes the results of each indicator.

In Bansankong School, the results reveal that the indicators are highly relevant to the school's ESD practices. The population in the Bansankong School area is self-reliant and self-efficient, and the democratic ESD practices employ the concepts of cultural adaptation, interdependence and equitability in line with the goal of a sustainable future. Interdisciplinary approaches, community engagement, mutual benefits, collaborative approach and partnership, technology and media usage, and the

leadership and contingency approach are all present in the case study at slightly different levels. The data processed using NVIVO 11 software present interesting information on the frequencies of the indicators. The following section provides data and interview excerpts.

4.2.1 Collaborative Approach and Partnership

Co-production suggests that public services and welfare systems should be delivered in ways that tend to be more participative as well as more equitable. It encourages people to participate on equal terms. In addition, it fosters equal partnership between providers and users. In terms of sustainability, co-production enables people to develop, flourish and expand their capacities (Boyle & Harris, 2009).

In Bansankong School, the collaborative approach and partnership were the aspects of the implementation and co-production of ESD that were mentioned throughout the interviews. Six of the ten respondents mentioned the collaborative approach and partnership as a factor of the implementation and co-production of ESD. The six respondents each referred to the terms once in the interviews. The graph below displays the frequency with which these indicators were mentioned:

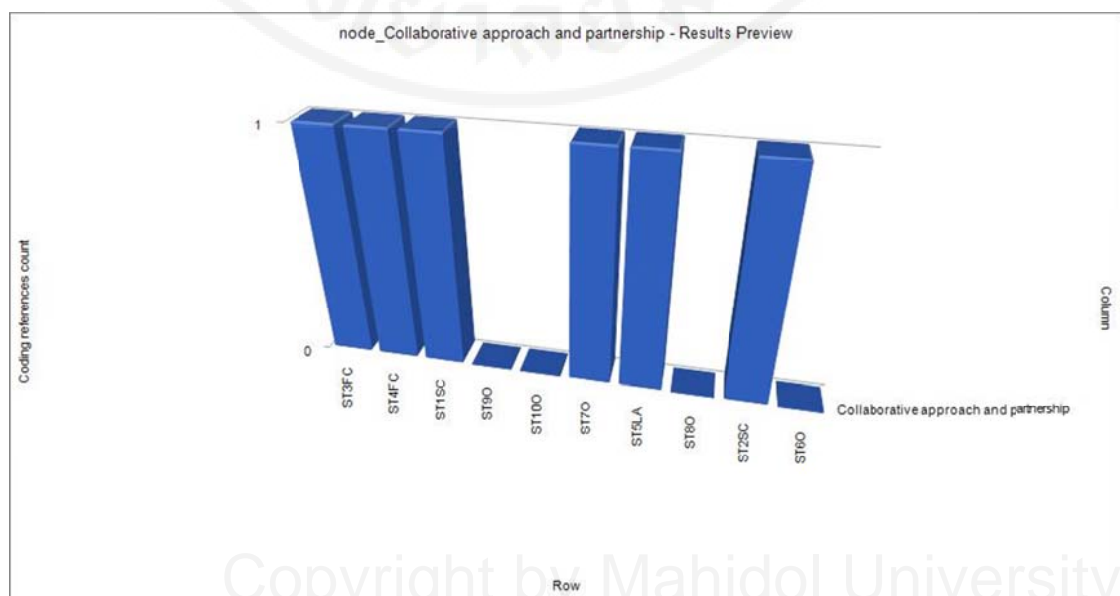


Figure 4.1 Frequency of Collaborative Approach and Partnership in case study I

This result shows that the school has made attempts to create a network and partnership with other institutions and organizations; however, this kind of partnership does not show equal characteristics between the service providers and users. What is found in the collaborative approach and partnership aspect is, for example, the fact that the school partners with others in the community. Bansankong School has been trying to build partnerships with the community. In fact, a school in the education system is considered as a corporate which has to manage its internal activities on its own. There are many activities, such as students' lunch service, that the school has to manage through buying raw materials and cooking. The school partners with the community and neighbourhood companies in trading and being a marketplace for community products, as illustrated in the following quote.

Our chicken farm is from the donation by the CP (co.th). We wrote to the CP saying we need to sell them our chicken product like eggs. They came here to have a farmhouse built within our budget. We started with a small number of chickens, like 100 – 200 chicks. When we partner with external organizations, we can reduce our costs. (ST2SC, June 14th, 2016)

The school regularly buys organic vegetables for school lunches from farms that use pesticide-free farming methods. In addition, it has opened a community souvenir shop in front of the school to serve as a marketplace for the school and for community commodities. The school has formed networks with both governmental and private organizations. The Non-formal Education Unit, for instance, is a governmental education agency which collaborates with the school to create careers for the students and people in the community, as the following extract shows.

We develop the children to be entrepreneurs. This coffee shop is used as an entrepreneur workshop. They come here to improve their recipes. Then, we connect with the Non-formal Education Unit for the project. (ST3FC, June 14th, 2016)

The above is an example of rooting the idea of ESD and Sustainability within the students and the community by using collaborative methods and partnership. It shows the strengthening of ESD practices in the school. However, with regard to this indicator, the school does not show some of the attributes that are mentioned in Chapter II. For example, the case study misses the equal terms of partnership between the providers and users (Boyle & Harris, 2009). The service users, such as the students, their families and the community, may feel that they are a part of the school but not on equal terms. It is mainly the school and its administration team that plans and implements the policy. The equality of users and professional roles in designing and delivering services are points that are not outstanding in this case. These indicators seem not be particularly significant in this case study compared to other indicators, such as those discussed in the following section.

4.2.2 Community engagement

Community engagement refers to the process of working collaboratively together with and through groups of people that are affiliated by geographic proximity, special interest, or similar situations. It aims to address issues affecting the well-being of those people. Linking the term ‘community’ to ‘engagement’ serves to broaden the scope, shifting the focus from the individual to the collective (CDC, 1997). Community engagement is important to solve local problems and voice the community’s needs to the service providers. The situation of community engagement in this case study is positive. The results show strong relevance to the school’s practices.

Community engagement proved to be one of the most significant indicators in the case study. Seven of the ten respondents mentioned it; moreover, four referred to this aspect twice or more during the interviews. The graph below displays the frequency with which this indicator was mentioned:

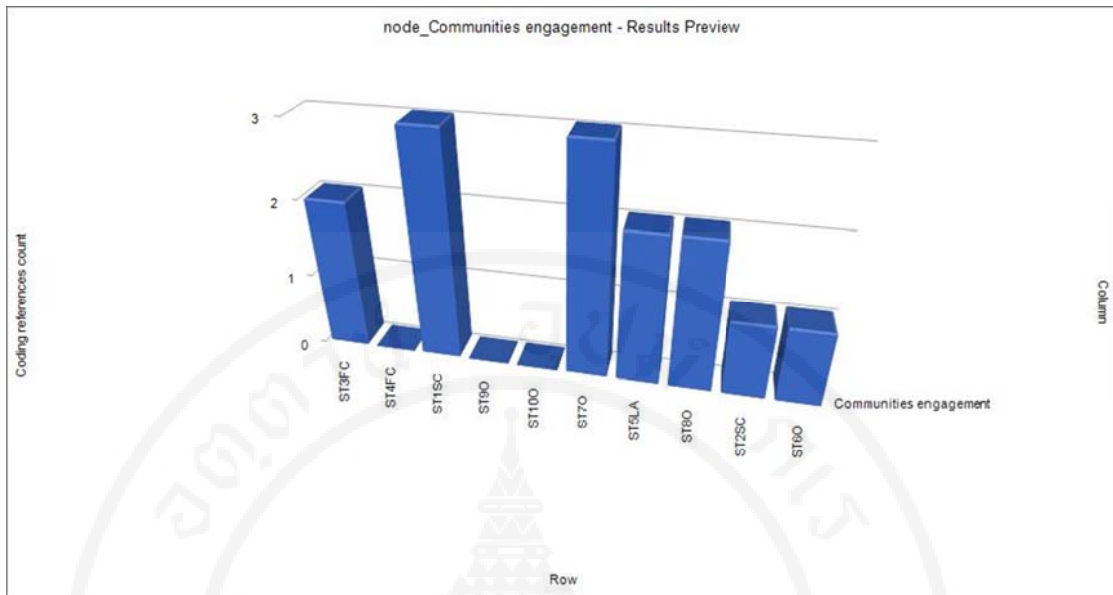


Figure 4.2 Frequency of mentions of community engagement in case study I

It is community-based education management. There are seven steps. We train the children to question and ask questions to the community where they live to study the community’s problems. The first step is that they have to study their community and its problems by investigating and asking the people. They collect the data on every aspect, like economy, politics, laws and community rules, professions, religions and social contexts. (ST1SC, June 14th, 2016)

Community engagement is a hundred percent valid for ESD and co-production to achieve sustainability. At Bansankong School, ESD was introduced using a seven-step system. This is a type of community-based education management. When someone point out the problems that occur in a community and tries to mobilize and encourage people who share these common problems, everybody should engage in solving them, because they are their problems as well. In this case, the community was aware of crisis. The people became directly and indirectly involved in the process. Some joined the campaign directly as promoter, while others became involved indirectly by committing to the requirements and instructions of the campaign. One respondent said: “Our strongest point is Sufficiency Economy based learning. The community can come to study and use the school as a learning hub. This

year, we are using the seventeen Global Goals in SDGs as the objectives to reinforce the community.” The school is also the learning centre for the community itself.

What is not seen in the case study is the attention of all groups of people in the community in co-producing the education. Only those groups that are affiliated with the specific interests are involved. For example, the families who send their children to study in other schools are not interested in co-producing education with the school and might not even be interested to voice their needs to the community in terms of education provision. Another example is people from other professions that are not concerned with the school’s ESD lessons and activities, who are not interested in being involved in the ESD practices. The open market called Kard Bai Tong (Banana Leaf Market) is a project aimed to reduce the use of plastic bags in the community. It drew the attention of the students, families and people in the community to the need to care about the Earth, which is gradually being filled with non-biodegradable garbage. However, the project cannot force the branded convenience stores in the neighbourhood to comply with its rules. These are examples of lack of community engagement in the case study. Nevertheless, community engagement was shown to be significant in this case study. Next, the research moves to study another important factor, namely cultural adaptation, to check whether it contributes to the implementation and co-production of ESD.

4.2.3 Cultural adaptation

Cultural adaptation has been shown to be important in both co-production and the ESD context. The co-production of a public policy tends to be based on the cultural attributes of a society (Parrado et al., 2013). Meanwhile, ESD is locally relevant. It is necessary to interpret the term ‘sustainability’ in the local setting, as language is a tool to understand sustainability and SD. Care must be taken in expressing the concepts of sustainable development in other languages because languages and cultures say things differently (UNESCO, 2006). Cultural adaptation is another point that is highlighted in the SD, ESD and co-production literature. The interviews investigated this aspect and the following result was found:

Eight of ten respondents gave opinions on cultural adaptation aspects as an attribute of implementation and co-production of ESD. One of the eight respondents

mentioned it twice. The graph below showed that the aspect was moderately highlighted:

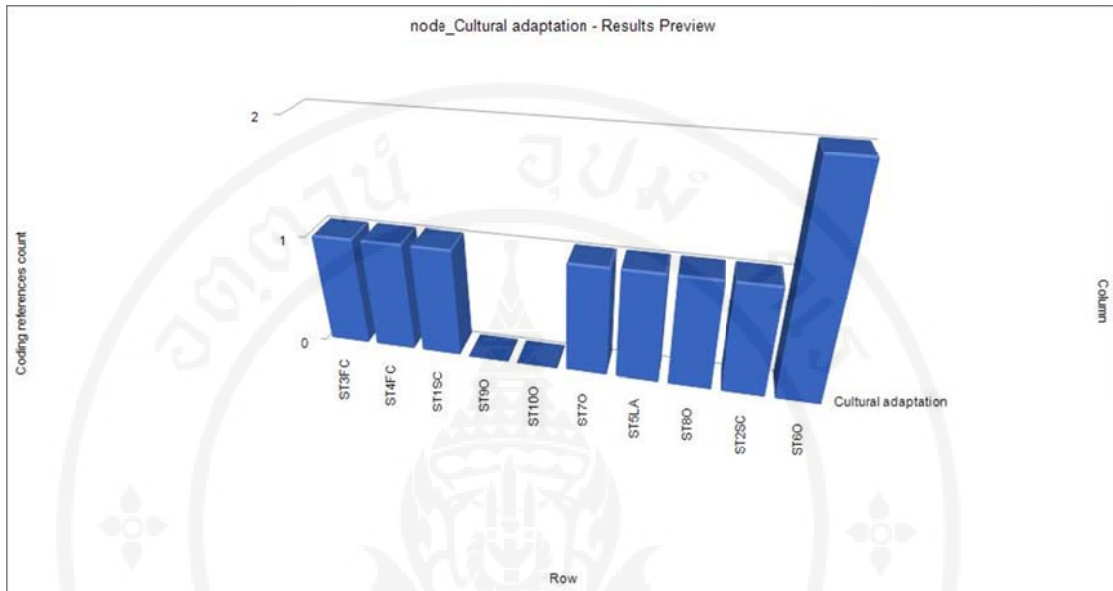


Figure 4.3 Frequency of cultural adaptation in case study I

In the Bansankong School case study, the school emphasizes the importance of integrating local folklore and culture into the curriculum. The case meets the UN goals in addressing the issue of illiteracy while trying hard to achieve other goals. By embedding good attitudes towards the environment, society and the local economy, the children are encouraged to develop strong caring mindsets towards their communities.

In Chiang Rai province, there is a lot of deforestation. Therefore, it is necessary to solve the community problems here. We have elderly people aged over 50 and the younger generations who move out of the town to pursue their studies. We need to reinforce the community by adapting BORWORN theory (the interdependence among School, Temple and Home). Our local knowledge is about growing herbs and making herbal medicines. The qualities and standards have to be improved, from the recipes to packaging. We need to give the villagers this knowledge. They will first apply it to plant the herbs in their spare time. Then they can expand

their farms and plant them in the hills instead of deforesting. The knowledge disseminates from village to village. (ST3FC, June 14th, 2016)

The three-pillar aspects (environment, society and economy) in the local environment are not to be ignored, because they are rooted in the children's lives, particularly in terms of the way the children and their families earn their living. For example, the school includes the Sufficiency Economy and the practices of Sufficient Agriculture in the curriculum. A stakeholder said: "We do agriculture. When we adopt the local knowledge into the curricula, we do it in a sustainable way. Students complete lessons in sustainable agriculture and then they can earn their living in this way" (ST4FC, June 15th, 2016). Moreover, the children use the seven steps of community-based learning from the ESD project as a tool to study their community and its problems.

The method encourages the students to develop critical thinking and care for their environment. The case study reveals that the school incorporates cultural and traditional folklore into its lessons, such as applying local wisdom about native herbs to teach the students to use them and to preserve them in various forms. However, these lessons stick quite closely to the central Thai tradition. Only a few Akha traditions, which belong to most of the students, are found.

4.2.4 Democratic participation

In the co-production literature, the percentage of the population coproducing public service depends on different government regimes. The statistics show more participation in democratic governments than in social welfare regimes (Pestoff & Brandsen, 2009). The more democratic a society is, the more co-productive it becomes. In terms of sustainability, many studies show that it is necessary to encourage the principle of cooperation between stakeholders and the sustainability discourses emphasize democracy and involvement in decisions that affect them. Therefore, it is important to check whether the case study school contains this feature.

Only six of the ten people interviewed mentioned the democratic participation factor. However, two people acknowledged it twice. This indicator seems

to be less significant than those discussed above. The graph below shows the frequency of the theme:

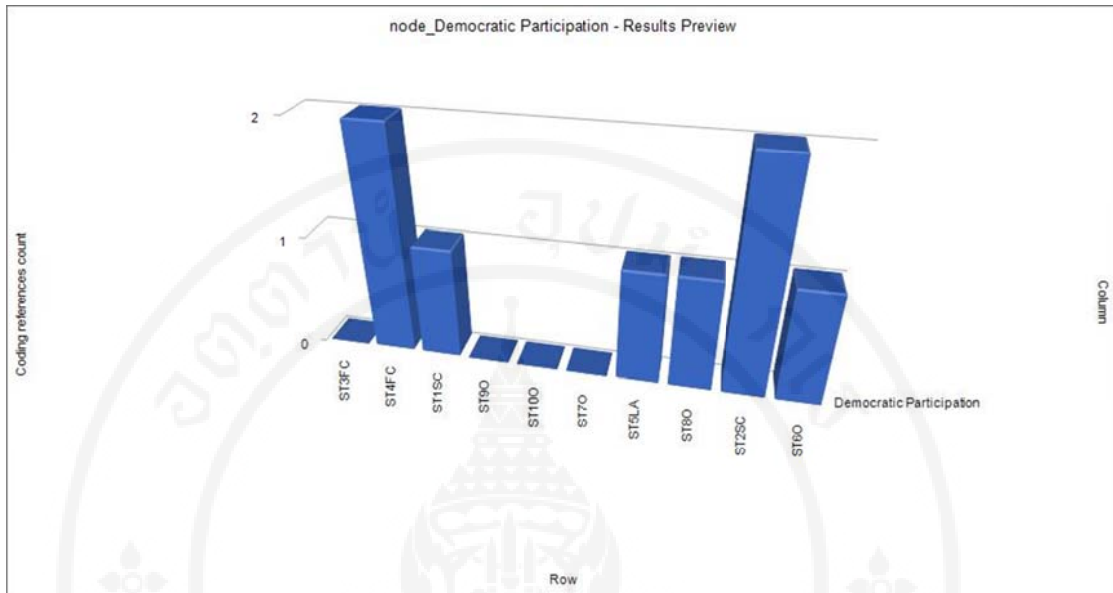


Figure 4.4 Frequency of democratic participation in the case study I

Democratic participation starts from the town meetings. We focus on democracy in every process: budgets or even Municipality activities need to be agreed by the town meeting. The school is the board. We try to provide evidence for the objectives and the importance of each project before they vote, to avoid people going with the crowd. (ST1SC, June 14th, 2016)

This situation pushes Akha families to participate in town meetings to show willingness to express the citizens’ right to democracy. At the local level, the Municipality, as citizens of Thailand, participate in the meetings to acknowledge and share their opinions with the service provision management from the government and local government. Education helps them to acknowledge their rights according to the constitution law. This knowledge is transmitted through their leaders or with the help of the school.

However, according to the headmaster of Bansankong School, the educational service provision from the school is a government service that people scarcely give the strong opinion in the management. This is because parents from Akha families do not know much about how education provision should be. Some of

them have low literacy. Generally, in Thai society, schools seem to be institutions that people respect. One respondent said, “People who have responsibilities have to go to the meeting. Every project has to be transparent. The school informs the representatives in the meeting about their policies” (ST6O, June 14th, 2016). The parents acknowledge the school policies because they are made transparent. However, the extent to which they are democratic does not prove to be a necessary factor for joining and co-producing the education.

4.2.5 Equitability

In terms of public service provision, co-production means the delivery of public services in an equal and reciprocal relationship between professionals, public service users, their families and their neighbours (Boyle & Harris, 2009). Moreover, ESD is a broad concept that introduces a distinctive orientation to many essential features of education. That is, all aspects include access, relevance, equity and inclusivity of education (UNESCO, 2006). The terms “equal”, “equity” and “equality” are highlighted in the literature. This section examines the significance of these factors in the case study school.

The equitability indicator appeared to be concerned with the implementation and co-production of ESD. Seven of the ten people interviewed referred to it as a common attribute of the context. Three of them mentioned it twice. The graph below shows how many times people responded to the questions regarding equitability:

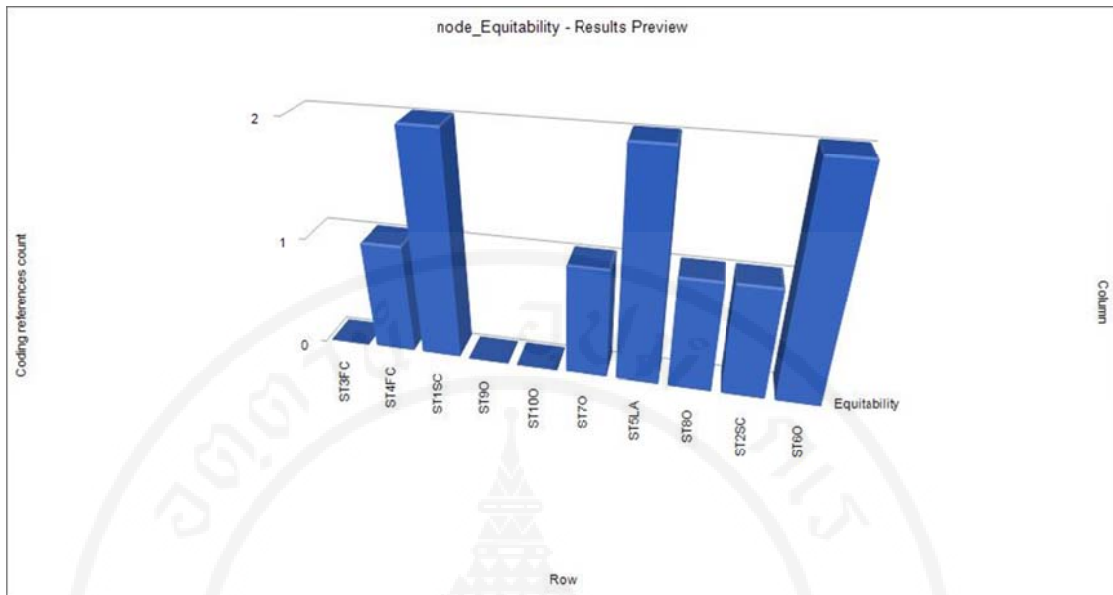


Figure 4.5 Frequency of equitability in case study I

Equity and Equality need to be created in the society. For ideal government, it is necessary to equally distribute the service provision to everybody.

The school demonstrates fairness in giving education to students. It accepts all students. Even the subsidies *per persona* from the government are not enough. This is okay because the school and the students help one another in planting vegetables to eat and raising fish to eat. (ST5LA, June 15th, 2016)

In practical terms, this might not happen. Co-production improves the situation by encouraging both service providers and neighbourhoods to become dynamic agents of change. Bansankong School as a service provider gives everybody, not only Thai national students, the opportunity to study in the school. As a public school with human right assessment, it receives all students who are willing to study in the Thai education system, even they are from neighbouring countries with no Thai birth certificates or from hill tribe families. One respondent said: “We give opportunities in education to everybody. If they don’t have education, how can they live their lives? We are teachers: we keep doing good karma” (ST1SC, June 14th, 2016).

However, some barriers are obvious, particularly in the form of teachers who do not understand ESD and tend to commit to the core curriculum, which is assessed by the national test, called “ONET”. This hinders ESD practices and prevents equity and equality. Some teachers find that accepting all students due to the principles of equity and equality causes difficulties in classroom management. Because of the language barrier and different abilities to learn, the school may face problems in completing tasks to meet the national academic standard. Nevertheless, this is just the opinion from the professionals who implement the policy. In reality, state schools like the case study have to receive everyone who wants to study according to the national acts.

4.2.6 Goal of sustainable future

Equitable desire for the developmental and environmental needs of present and future generations is one aim of SD (Yossatorn, 1999). Co-production may be a process that help them to achieve this aim. It can shift stakeholder perceptions from narrow, self-focused views toward a collective understanding of a sustainability problem (Schuttenberg & Guth, 2015). Many authors in the SD literature emphasize the importance of a sustainable future. The co-production approach expresses the ultimate goal of equity and fairness in service provision to achieve sustainability. It is all about the management of resources to have enough for future generations. The goal of a sustainable future depends on local interpretation, as does the term “sustainability”. These goals vary in each case study. Therefore, it is important to study the aspect case by case.

Achieving a sustainable future should be the ultimate goal of the implementation and co-production of ESD. However, it did not prove to be one of the most significant factors in the present case study. Although seven of the ten respondents mentioned the goal of a sustainable future, most of them referred to it only once during their interviews. The graph below displays the frequency of appearance of this indicator:

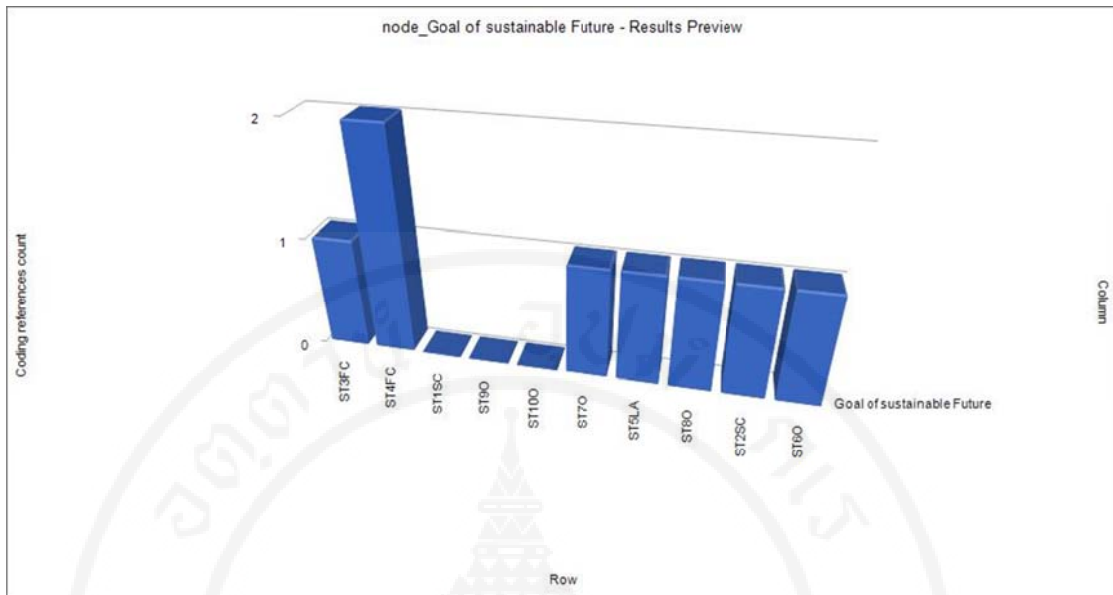


Figure 4.6 Frequency of Goal of sustainable future in the case study I

The goal of a sustainable future is the most strongly emphasized in both ESD and co-production exercises. The ultimate objective is to achieve sustainability. The school hopes that its students will be self-sustaining in terms of economic and social aspects. Furthermore, on a bigger scale, the community hopes to be able to maintain the good things they have at the moment, such as the natural environment and resources, traditions and customs, for the future generation.

ESD is not only academic but also a skill-oriented subject like Sufficiency Economy. For example, fishery, bee raising and chicken farming – they know how to do these jobs, but it’s not necessary for schools to do only one thing. They have choices and it’s a more sustainable way. (ST80, June 14th, 2016)

Using ESD, together with collaborations from many actors, the school tries to build the mindset of the students, their families and the community toward critical thinking and problem-solving skills in a sustainable way. For example, one ESD project on solving waste-management problems was an exercise based on the real problems of the area. People produce large quantities of rubbish, but in Mae Rai sub-district, there is not enough space to dump and then destroy it. The Municipality

helped to solve the problem by find a place outside to manage the waste; however, this was not a sustainable solution. People still produce a lot of household garbage. For this reason, the school initiated a waste management project by prohibiting the use of plastic bags and preventing students from consuming snacks with non-biodegradable packaging. This is a far better method to reduce the amount of waste generated and save the environment.

People interpret the word “sustainability” in different ways depending on their background and education, together with other factors such as their locations and environments. The school applies the SDG’s seventeen global goals. However, completing all of these goals is not an easy task. Only certain goals, such as goal 1, “End poverty in all its forms everywhere”, and goal 2, “End hunger, achieve food security and improved nutrition and promote sustainable agriculture”, are used as policy initiatives to accomplish the SDGs goals in the community. The other goals seem to be more difficult to realize by a single unit. Therefore, it is necessary to consider interdependence aspects.

4.2.7 Interdependence

Other studies of SD, ESD and co-production show dominant themes such as interdependence, community involvement, cultivating ESD knowledge and family involvement (Green, 2011). Schools depend on other institutions to maintain and improve their services. In this case study, interdependence is evident in the school’s practices. It appears to be a significant indicator, as nine of the ten respondents mentioned it during their interviews; furthermore, three people referred to this aspect twice. The graph below displays the frequency of appearance of this indicator in the interviews:

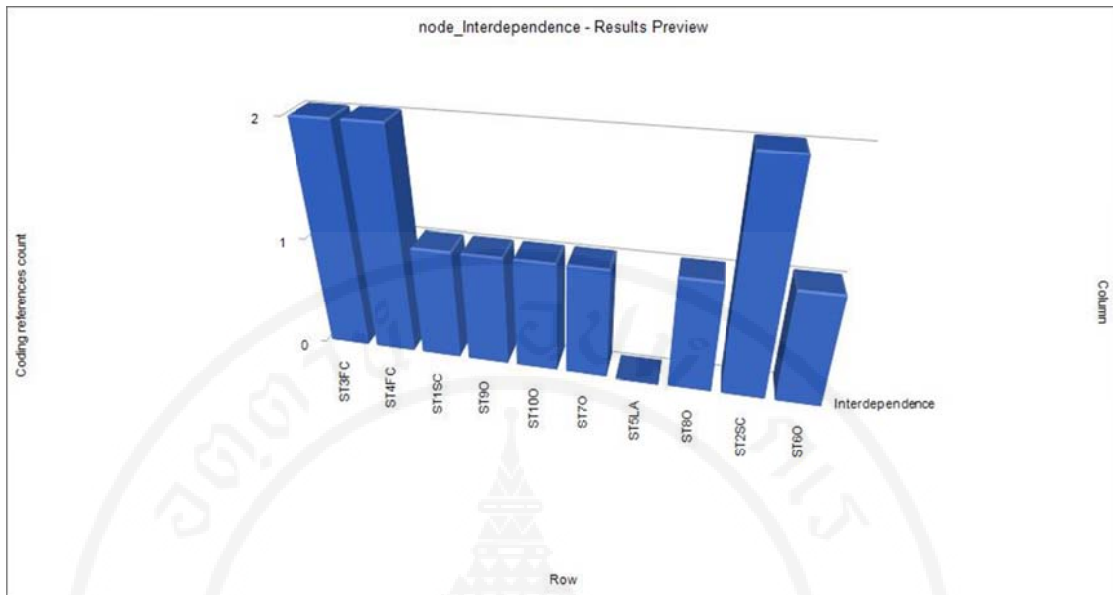


Figure 4.7 Frequency of Interdependence in the case study I

A stakeholder in the co-production of ESD mentioned that “sustainable education needs to have collaboration from every institution: House, Temple, and school (BOR WORN)” (ST9O, June 14th, 2016). The research shows that few projects can be accomplished without interdependence among the stakeholders. ESD policy comprises many practices that need collaboration from other sectors. Even schools as institutions cannot stand alone to do their jobs. Communities, especially local Thai ones, are based on three institutions: Home, Temple and School (the BORWORN model). The three units usually work together and are interdependent in social and economic aspects. In terms of coproducing ESD policy, the situation remains the same. As well as the parents’ association and alumni who are members of the school’s administration board, monks from the local Temple have also joined the Board. Moreover, the monks co-produce classes on Buddhist subjects. Even though most of the students are Christian, the interdependence among these three bodies is common.

We, in the name of the church, registered as the Emanuel foundation. We adopt orphan children or those whose families live in the high mountain to stay with us and send them to school. There are foreign missionaries from abroad and we understand that. We have seen the

condition of the children here that need help. We have a heart to help underprivileged children. (ST6O, June 14th, 2016)

This happens through the school management. Sometimes, the local Christian churches also collaborate with the school in student and school activities. One key informant mentioned that “no development happens without collaboration and interdependence” (ST3FC, June 15th, 2016). However, the form of this interdependence evolves in a natural and intuitive way. It is not a formal or legal arrangement. Therefore, it is not easy to control this indicator.

4.2.8 Interdisciplinary Approaches

According to UNESCO (2006), one of the seven essential characteristics of ESD is the interdisciplinary approach. In addition, interdisciplinary and holistic learning for sustainable development must be embedded in the whole curriculum. Policy-makers should not set ESD as a separate subject. Burmeister and Eilks (2013) suggest that all ESD should focus on the orientation of education around societal issues. The use of an interdisciplinary approach and changes in pedagogy far exceed the mere rearranging or altering of curricula (Paden, 2000, cited in Burmeister and Eilks 2013). Co-production of education provision applies this approach, as different co-producers have different capacities to convey knowledge.

The interdisciplinary approaches indicator is concerned with the implementation and co-production of ESD. Seven of the ten respondents referred to it as a common attribute; nonetheless, only one person mentioned it twice. The graph below shows how many times people mentioned interdisciplinary approaches:

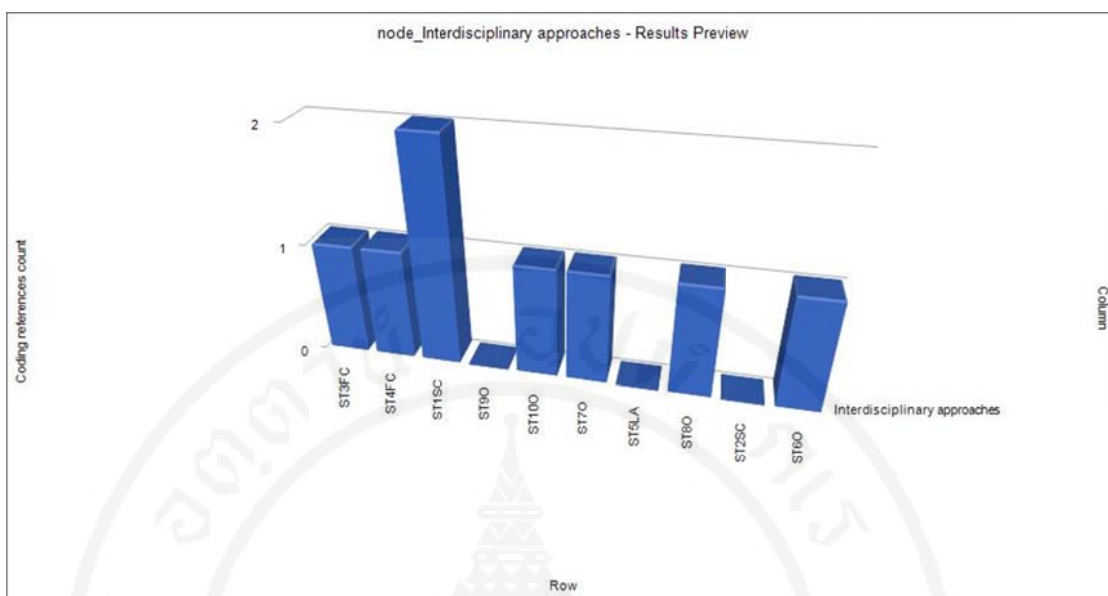


Figure 4.8 Frequency of interdisciplinary approaches in the case study I

The interdisciplinary approach is one of the cores of ESD, alongside co-production. ESD does not usually happen in the classroom. It can be organized in every setting: rice fields, courtyards, families' farms, etc. It is necessary to integrate all useful subjects and approaches to create a classroom in an extraordinary setting. Those who co-produce the classroom, such as families, become the teachers in that lesson. They may unconsciously integrate their own experiences into the class they are giving. Here, the school asks for collaboration from many sources to co-produce ESD.

The children have the self-confidence and love to express their own ideas. This is because we teach them to think critically. The school integrates all subjects into one practice; for example, we teach ecology by letting them go and survey their environment. After that, we ask them a set of questions and help them to shape their answers. They learn a lot and know how to analyze things.... The result from this method is that they learn without reciting lessons from books. In the long term, they can learn further things through their own life skills. (ST3FC, June 15th, 2016)

One example is the coproduction from families. The families are not only required to coproduce the education at home by raising their children with a good

attitude and facilitating learning by helping them to do homework and school assignments, but are also invited to come to the school and co-produce the school activities and classrooms according to their skills, such as farming. These aspects are not seen as formal plans to integrate the knowledge gained by activities and classes. In fact, they may not be important because the students who co-produce the lessons gain knowledge little by little through life-long learning. In the next section, another indicator is discussed.

4.2.9 Leadership and Contingency Approaches

Leadership is one of the dominant keywords found in the literature. As argued by Shuttenberg and Guth (2015), this reflects the importance of leadership in the co-production of public services. Meanwhile, Parkorn Suwanich (2008) suggests that the leaders of the communities are the ones who put forward the community-based policies. Leadership and the contingency approach are outstanding in the cycle of community policy-making. The case study examines how leadership is applied. At which level does the case study show its leadership attrition?

Seven of the ten interview respondents from this case study school mentioned leadership and contingency approaches. Significantly, four people acknowledged this factor twice and one mentioned it three times. The indicator thus proves to be significant. The graph below shows the frequency of appearance of the theme in the interview responses:

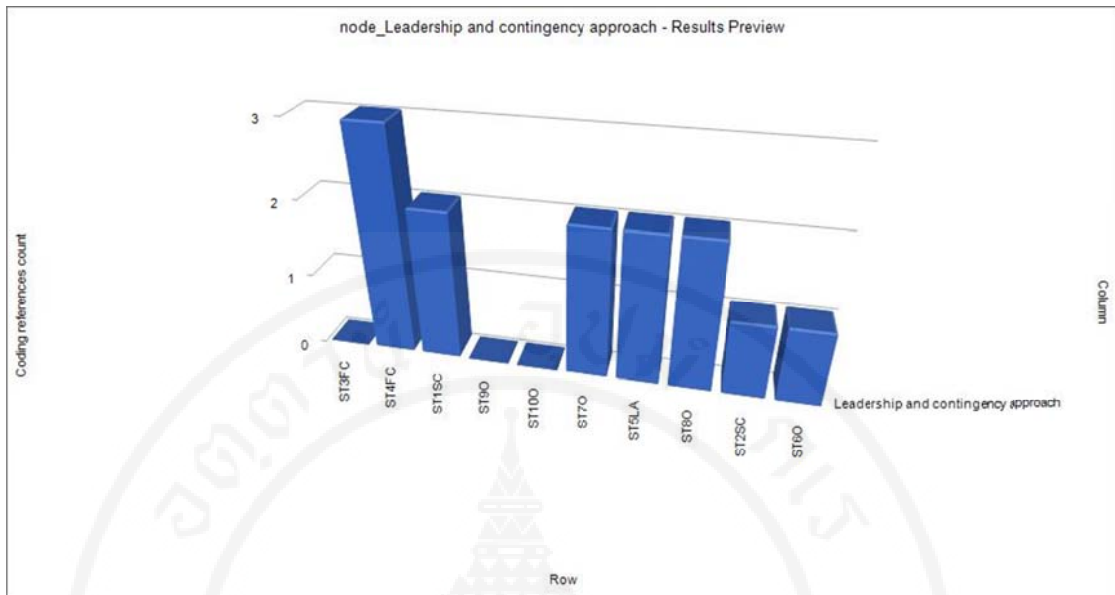


Figure 4.9 Frequency of leadership and contingency approaches in the case study I

Before we improve the school, we need to look at the efficiency of teachers first. The administrator must be smart. Then, the school administrator and the teachers must collaborate to be role models. They have to set a good example, do good things for the students to follow. After that, the students will tell their parents about what they've seen. The parents may consider joining in further collaborative efforts. (ST4FC, June 15th, 2016)

Leadership is very important in every context. For schools, which manage and provide education service to the pupils, leadership is essential at each level: from top to bottom or from the management team to policy implementation. The lesson learned from the Bansankong School case study is that the vision of the leader is the factor that embraces the SD practices into the education management. As the achievement of sustainability is rather abstract, long-term and contested, leaders have to believe that ESD is the best approach and is one that pupils make use of. After they finish school, they will have the right mindset toward the environment and a good attitude toward their lives and careers. The school has been conducting SD exercises with students for a long time, since the headmaster was promoted to his current

position. When they joined the ACCU ESD program, the activities became more outstanding than pure academic-based lessons.

Here, people love the school leader, because he always helps them a lot. That's why when he asks for something, people do not hesitate to give back. He's straightforward. He's stayed here for 22 years. There's been no question about money. They've never asked what the money is used for. If they donate 100,000 baht, when they see what the school is doing, it's worth more than that amount (ST70, June 14th, 2016)

Amidst some disagreement from some teachers who did not understand ESD and wished that the school could be geared towards academic achievement, the school has integrated both approaches and continued with this method. Many schools give up ESD practices soon after starting. However, this school has succeeded in ESD implementation by encouraging the community to co-produce the policy.

4.2.10 Mutual Benefits

Mutual benefits are mentioned throughout the SD, ESD and co-production literature. The benefits of the policy feed back into the political system to increase political support and thus sustain the program (Wongthanavas, 2003). There are two-way benefits between stakeholders. Users of many public services are themselves important co-producers (Whitaker, 1980). In education, teachers cannot produce education without the co-productive efforts of students. They rarely produce the results themselves. The students and the parents, as much as the teachers, have an impact on the education that each pupil obtains. The research aims to check the mutual benefits happening at individual and collective levels in the case study. Moreover, it checks how important the mutual benefits are to the case study.

Mutual benefit was the aspect of the implementation and co-production of ESD that was the most frequently mentioned through the interviews. Seven of the ten respondents mentioned mutual benefit as a factor that enhanced the implementation and co-production ESD. One respondent referred to this term five times in the

interviews and another four acknowledged it twice. The graph below displays the frequency of appearance of this indicator in the interviews:

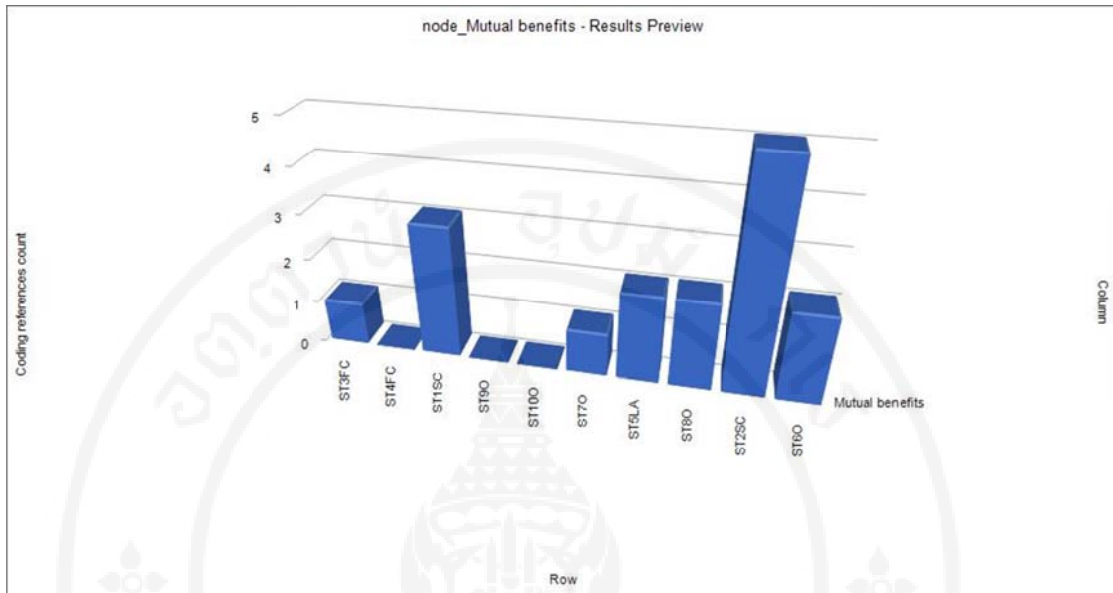


Figure 4.10 Frequency of mutual benefits in case study I

We hire only one foreign teacher: the other foreign teachers are volunteers. They stay here for a long time. We help them with work permit documentation. We don't give them money, but some little things like rice and eggs for their meals. Most of them are okay with this option. Some invite other friends from abroad to come. (ST1SC, June 14th, 2016)

The co-production of ESD policy in Bansankong School creates mutual benefits among the stakeholders. At the intrinsic reward level, some may feel that they are givers; at the same time, they are also receivers. The givers receive rewards, not in financial terms, but in intrinsic form. For example, many foreigners come to Bansankong School to give foreign language lessons to the pupils. As a public school, the school cannot afford to pay their wages; however, it reimburses them with the right to legally stay in Thailand. That is the work permit documentation.

We arrange many things for communities. First of all, we have opened a shop for community products and we have it registered as a commercial shop, a public commercial shop. Secondly, CSR: you know, here CSR is

more than a tax deduction. When people donate some amount of money to the school, it gives them a two-fold return because the school uses the money to hire people in the community to do some work. One part of the benefits comes back to school as well. (ST3FC, June 14th, 2016)

Meanwhile, there are real mutual benefits happening among the stakeholders. For instance, companies can use any donations to the school as tax deductions at the end of the fiscal year. As well as tax deduction, co-production can improve companies' reputation in the form of Corporate Social Responsibility (CSR). However, the basic practice of co-producing ESD can create reciprocal benefits among co-producers, service providers and service users. In the education service, when families co-produce the education, it means that their children can receive better education or the type of education that the families want for them. The quality of the co-producers is also essential. The research goes on to investigate the quality of people in terms of self-reliance and self-efficiency.

4.2.11 Self-reliance and Self-efficiency of Population

Self-reliance and self-efficiency of the population can be defined as people's ability to rely on themselves in terms of economic and social aspects. In political terms, they are efficient in committing their duties as members of society. Therefore, self-reliance and self-efficiency of the population is a good quality, which is expected in a society that needs the co-production of ESD. Self-efficacy of the citizens is an important factor in co-production (Parrado, et al., 2013). For these reasons, the self-reliance and self-efficiency of the population were examined in the interviews.

Five of the ten respondents mentioned self-reliance and self-efficiency of the population as an attribute of implementation and co-production in ESD. One even mentioned it three times and another mentioned it twice. The graph below shows how frequently this aspect was highlighted:

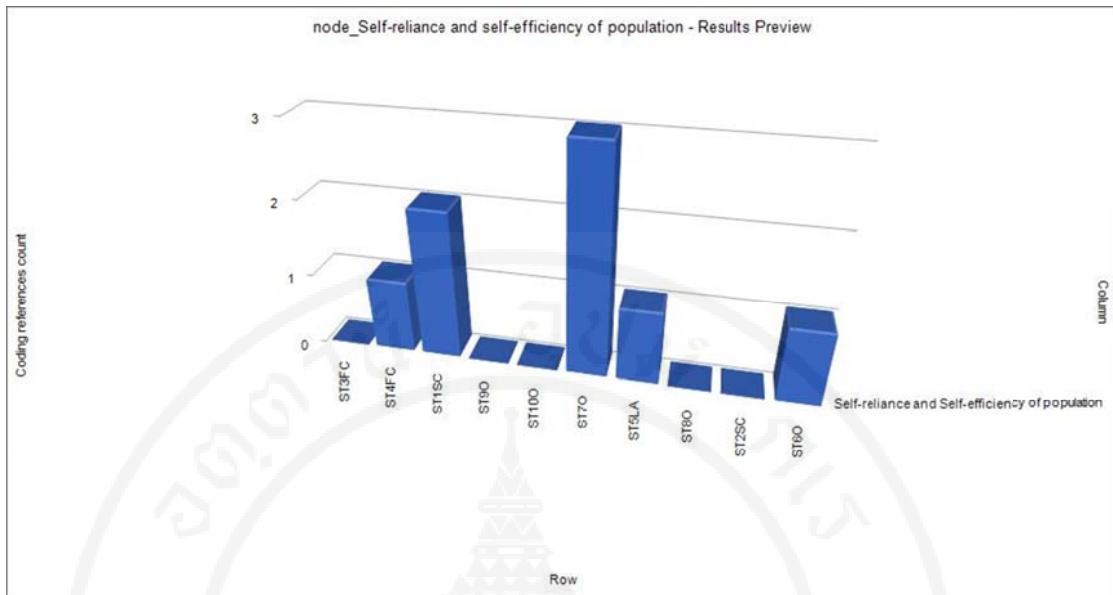


Figure 4.11 Frequency of self-reliance and self-efficiency of population in case study I

They are self-reliant. Although they do not own any land, they earn their living as employees. They are diligent. Even the 200 -300 baht they are paid is enough for them, because they live a simple life. They can live on one cup of chilli paste for a meal. People here are self-reliant. Natural resources here are not scarce. Most people earn their living properly, such as in agriculture. There’s a small number who don’t do the right things, but they are the minority. The majority does agriculture.... People who live in plain cannot do as they do. Even if they have a square meter of land, they do not leave it empty (ST70, June 14th, 2016).

It is thus clear that the population of Mae Rai district are self-supporting. Most of the population, who are from the Akha tribe, are involved in agriculture: some own land and others are employed to work for them. The leftovers in the society are rare, and have help from the government until they can find work. An example of such help from government initiatives is the Doi Tung Development project. Land for agriculture is allotted on the plain through a royal initiative. The hill-tribe population have to adapt themselves through education, which is provided equally to everybody. By learning the Thai language and sending their children to school, they have integrated with the Thai people and those on the plain. This is how the people in the

community demonstrate their self-reliance and self-efficiency. However, for the implementation and co-production of ESD, people may need other tools.

4.2.12 Technology and Media Usage

Technology and media usage is mentioned many times in the literature. Watanabe (2013) and Tsai (2013) recommend that ESD implementation requires hardware and software. Implementing or co-producing the policy might require special equipment. Citizens may need specific production skills or knowledge to provide positive coproduction (Alfors 2002; Levine 1984, cited in Jakonsen, 2012). Furthermore, citizens' co-production often increases if they have certain tools or facilities. Therefore, technology and media usage is examined in the case study, as this indicator relates to the implementation and co-production of ESD. Six of the ten people referred to it as an important attribute; one mentioned it three times and another referred to it twice. The graph below shows the frequency of the appearance of technology and media usage in the interviews:

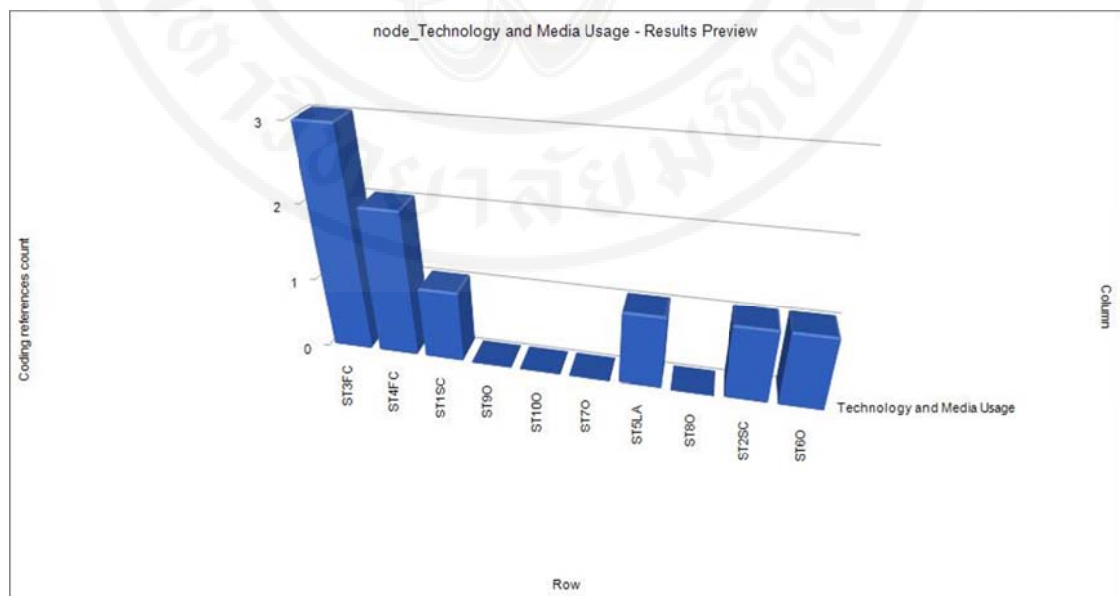


Figure 4.12 Frequency of technology and media usage in the case study I

Only 10% of students are good at IT. The rest of them are good at life skills. However, if they understand the context, then we accompany and advise them to do what needs to be done. We call it magic. Students can finish the assignments in the wink of an eye. (ST3FC, June 14th, 2016)

The usage of technology and media such as television broadcasting lesson was evident in Bansankong School. The usage of other media, such as social media and websites, was present but less outstanding. Technology is an investment that requires considerable amounts of money. A middle-sized school like Bansankong School receives an annual subsidy from the government; however, this is not for computer and internet investment. A privatized company, CAT, co-produces the application of technology in the school by giving a donation to build a library and computer room. They co-invest in the facilities of the school, which contribute to other lessons. These facilities should come with the knowledge of how to maximize the application of these technologies. Nonetheless, the school still lacks technology experts who can improve their application. A school stakeholder said that with the help of foreign volunteer teachers, the school had learned how to use this kind of channel to improve and promote its activities. He went on to say, “There is no need for advanced technology: basic equipment is enough” (ST1SC, June 14th, 2016). It can be assumed that the case study school still lacks experts who can maximize the use of technology and media.

To conclude, research has found evidence of all twelve indicators in the first case study school. Nevertheless, they show differences in their levels of significance to the case. The researcher has employed the frequency of the keywords mentioned during the interviews, together with content analysis, to study the significance of all indicators. This analysis is discussed in the following section.

4.3 Discussion: The frequency of indicators as significant factors in the implementation and co-production of ESD

When the graphs of the frequency of the indicators mentioned during the interviews are put together, a new graph is created, which gives a meaningful picture of the significance of each indicator, as shown below (Figure 4.13):

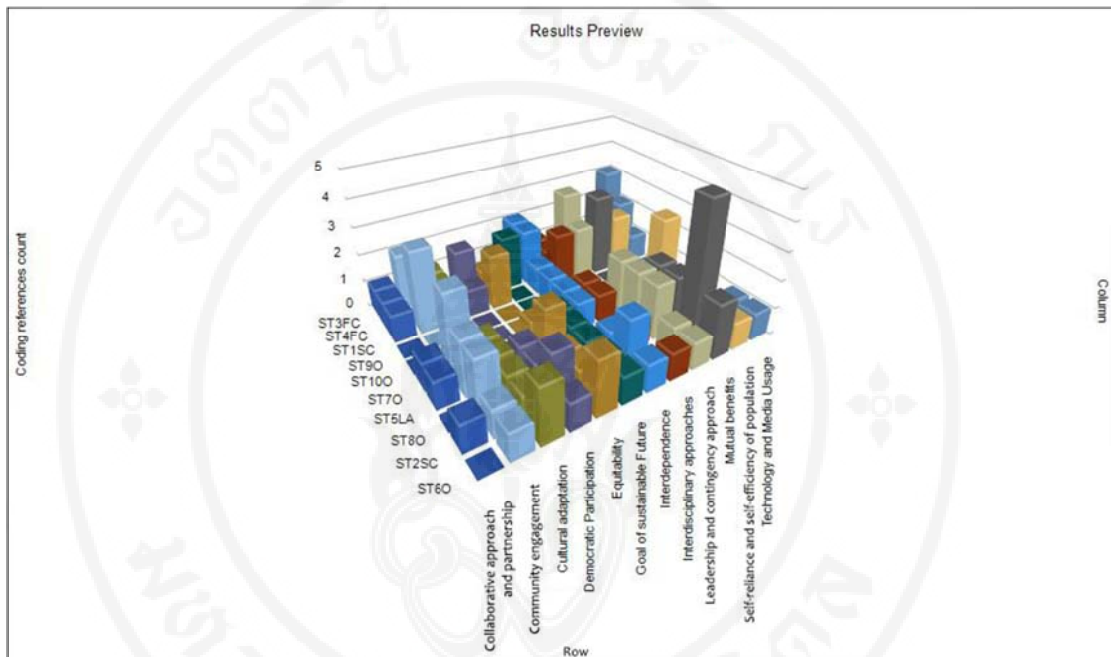


Figure 4.13 Frequency of indicators in case study I

This graph shows that there are five concepts that appear to be more significant than the others. These are: mutual benefits, technology and media usage, self-reliance and self-efficiency of the population, leadership and contingency approach, and community engagement. The mutual benefits indicator shows the highest significance of all indicators. The result highlights that if people benefit and gain from what they do, this facilitates the occurrence of co-production. However, good inputs and processes are also needed if an optimal outcome is to be achieved. The research adapted Easton's system model, which will be revisited before discussing the significance of the indicators. The five indicators with the highest frequencies are put into graphical form, namely input, process and output. When these key indicators are put into graphical form, the following result is obtained:

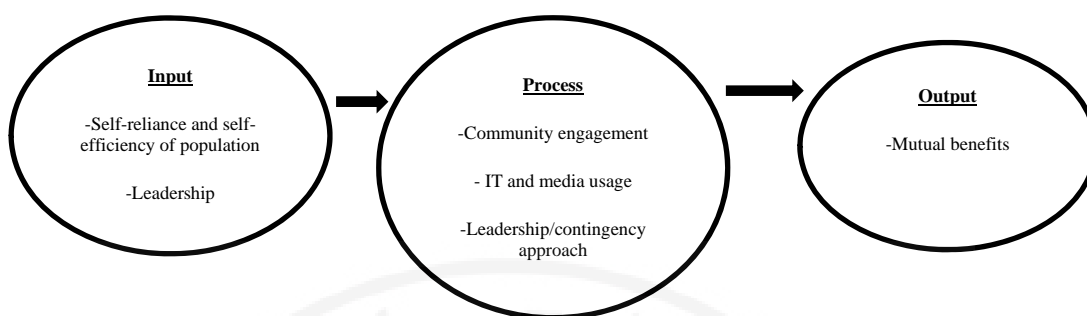


Figure 4.14 Cycle of implementing and co-producing ESD with the most significant factors (Author's figure)

In the input segment, the researcher finds self-reliance and self-efficiency of population and leadership. For the leadership and contingency approach, the indicators are considered to be in both the input and the process segment, because it is composed of two attributes. Leadership is an input; meanwhile, the contingency approach is considered as a process. According to Parrado et al. (2013), individual attitudes, values and motivations are prone to explain variation in co-production behaviours. The beliefs that show one's self-efficacy are significantly more important in determining performance outcomes than the skills that one possesses with regard to the task. They believe that self-efficacy of citizens might be an important factor in co-production. This corresponds to the result found in the case study, which portrays how self-reliance and self-efficiency affect the co-production of ESD. Although most of the population in the area are not particularly wealthy, they prove to be efficient and believe that they can accomplish what they do. A self-supporting economy can lead to sustainability (Lerner, 1968). This case study confirms this statement and paves the way to SD. It is the role of the leaders in each community to provide knowledge and encourage responsibility within the local community. Social development and community self-reliance can lead to community and environmental development toward sustainable development (Moohamud, 2013).

Moral support is also important. Support from the leaders is evident in this case study. Especially in the school, the leader provides opportunities to people who can give lectures to the student on their particular skills. Many studies in the literature also focus on the leadership and contingency approach as a key success factor in

implementing any policies. According to Suwanich (2008), the key characteristics of leadership in community-based environmental public policy development are that leaders must have a new paradigm and a public consciousness attitude. Furthermore, they must be willing to invite external assistance. They must develop local regulations, and finally, the rules and regulations of the community should not contravene state policy law. In the case study, the leadership and contingency approach is very significant. The leaders have gained the respect of people in the community, and the followers are thus willing to commit to assignments or collaborate in every task.

The results found in the case study confirm the importance of leadership in the community-based policy sector. In the case study, the school headmaster, who is the leader of the school, demonstrates consistency in undertaking ESD activities and the Sufficiency Economy classroom, with the belief that they are good for the students and the community. He has introduced a new paradigm to the education provision to the community. With the collaboration of the community and other stakeholders in other sectors, new regulations toward SD have been formed. An example from the case study shows a waste management project, with widespread compliance with the rule that no plastic bags are allowed in the school. Despite disagreement from some parties, such policies have been continued until they succeeded. This success shows that people benefit from them in both intrinsic and extrinsic forms. The intrinsic benefit is that, for example, they feel strong, self-reliant and self-efficient, while the extrinsic benefit is that people receive money and other benefits from the activities. As the result, such leadership supports other indicators to enforce the implementation and co-production of ESD. Self-reliance and self-efficiency of the population and leadership prove to be significant indicators in the input segment of the implementation and co-production of ESD. This result agrees with numerous studies in the literature which reveal that leadership is an important factor in driving the implementation and co-production of policies (Shuttenberg & Guth, 2015; Suwanich, 2008)

In the process of the implementation and co-production of ESD, the findings indicate the significance of community engagement, technology and media usage and the contingency approach. The findings for community engagement, which emerges as one of the most important indicators in the case study, slightly contradict

the literature. Co-production of education services is a particular type of co-production. The literature on education services shows two levels of co-production of education services. At the first level, the co-production function for education services requires input from traditional producers (that is, teachers), and traditional consumers (that is, students: Galli et al, 2014). Therefore, the active participation of students is necessary for learning. In this sense, if co-production is abandoned, the service will not happen. At the second level, other contingent inputs coming from parents, student peers, community, private and public organizations and the media affect the quality and quantity of education services. In this sense, if these inputs are skilfully and regularly contributed, they enhance the quality of educational services (Ibid). However, the case study proves that to reach another level of education provision, ESD, community engagement is significant in creating a teacher-student-community nexus.

The ESD implemented in the school is mainly aimed to study and solve the problems of the community. The solution for effective and efficient services is effective adoption and implementation of a collaborative approach between the government and community-based groups, particularly at local level (Popoola, 2011). Community engagement is essential in the case study. If the community does not cooperate, the education services, especially ESD, may not occur. The school uses CSA to study their own community problems and find solutions that work for everybody. The community directly and indirectly engages in the learning process. Therefore, the case study contradicts previous studies which argue that co-production from stakeholders, other than teachers and students, is optional. The case proves that it is essential in the process of the implementation and co-production of ESD. Moreover, the process may need other special tools and devices to improve the quality of ESD, such as technology and media usage.

Technology and media usage are favourable to co-producing ESD. Citizens' co-production often increases if they have certain tools or facilities (Watanabe 2013; Tsai 2013; Jakonsen 2012). Technology and media is a contingent input to the co-production of education services. It does not contribute in the same way as community engagement. The co-production and implementation of ESD can occur even without technology and media usage. However, technology and media

usage improves the quantity and quality of education. In this case study, technology and media usage is highlighted as a significant process in the implementation and co-production of ESD. The stakeholders recognise its importance to maintain and improve the quality of the service.

Mutual benefit is the output that most stakeholders in co-producing and implementing ESD desire. When people see what they will gain if they co-produce the education, they participate voluntarily. The benefits might occur in the short term or the long term. The case study shows that there are mutual benefits among people who give and take: those who provide the service and those who co-produce the service share reciprocal advantages. Often, the co-producers and the users are the same people. People gain what they give. This aspect proved to be the most frequently mentioned during the interviews. Therefore, it is the most significant feature that should be considered during the policy-making process. For ESD, the outcomes of the policy are expected to be at another level: that is, to achieve sustainable development. The outcomes will feed back to the inputs and processes described in the earlier graph.

The researcher sees that the most significant indicators are in the process of implementing and co-producing ESD in the cycle. It can thus be assumed that when co-producing ESD, it is necessary to focus on the process. In the case study, the processes are strong enough to bring ESD practices into the output, which most of the stakeholders highlight as results of mutual benefits. When the community and families understand what benefits they will receive, they are more willing to engage in the school's ESD activities. The process of the implementation and co-production of ESD should go along with the vision of leaders who attempt to solve the problems of the community, and at the same time, to instil the right attitude toward the environment and social concerns into the children's mindsets. The help of technology and media usage will enhance ESD practices in the social context of the case study. The people who co-produce the ESD in the case study are involved more in the process and practices than in planning or co-planning the services. This is due to the fact that the parents from Akha families do not know much about how education provision should proceed. This reflects the statement that the better the performance in service provision from local or state governments is, the less willingness there is to coproduce the services (Parrado, et al., 2013).

If full co-production means “professionals and users/communities as co-planners and co-deliverers” (Boviard, 2006, cited in Boyle and Harris, 2009), the case study may not prove itself to have achieved the full co-production of ESD. The case may apply to user co-delivery of professionally designed services (Table 1.1). Therefore, those who professionally design services – i.e. the school administration – are likely to be more important. The leadership and contingency approach was one of the most repeated keys in the interviews with the ten respondents. It is the leader who has the right to facilitate the co-production of ESD and the management team that allows co-production to happen in their jobs. If the team does not allow this and convey a vision of the benefits of the education service, things will never happen because people will tend to not co-produce any services.

ESD is an alternative and not a compulsory policy in Thailand. Meanwhile, the attributes of the co-deliverers are also important. Self-reliance and self-efficiency of a population were also emphasised in the interviews. This indicated that the qualities of the co-producers are important in co-production. Community engagement and technology and media usage should be the most essential processes in facilitating the co-production of ESD. Finally, mutual benefit is the primary and vital goal of the sample in the case study. Without an understanding of what they will receive when they co-produce the education service, people might not be convinced to make education sustainable to accomplish the goal of sustainability. As a result, people must know what they will give and what they will gain. Only then will they be willing to co-produce the services.

CHAPTER V
RESULTS AND DISCUSSION
CASE STUDY II: BANTHAYAE SCHOOL

In this chapter, the researcher discusses the second case study: Banthayae School in the Kanchanaburi province of Thailand. It is divided into three parts: the background and history of the school, the research results and a discussion of the case study. The first part of the research offsets out the background of the Banthayae School. This case study is interesting because the school characteristics match most of the criteria for the implementation and co-production of ESD mentioned in Chapter II. Moreover, it shows the most outstanding qualification in having very strong community engagement in managing the education services. It can represent different aspects from case study I due to its different context.

In the following part, the in-depth data derived from the interviews, geared to cross-check with the twelve indicators which show the linkages among SD, ESD and co-production, will be introduced. The results are presented in the forms of text, graphs and tables derived using NVIVO 11 software. The final part of the chapter discusses the significance of the indicators. In the same way as in Chapter IV, Easton's system theory is adapted to provide a framework to analyze the data: the indicators are put into graphical form as input, process and output. Consequently, the data are processed in terms of their significance to the case study. When studied in light of the background from the earlier section and the literature review in Chapter II, a model of the implementation and co-production of ESD in case study II is revealed. The chapter starts by setting out the important background of Banthayae School.

5.1 Research results in case study II: Banthayae School, Kanchanaburi, THAILAND

Banthayae School is a small school with only sixty students. It is located in Amphoe Dan Makham Tia, Kanchanaburi province. The school once faced closure under government efforts to restructure schools in Thailand by closing down small schools and due to inefficient management in maintaining the quality of its education provision. However, it survived and remains open. The background of the area of Dan Makham Tia is not very pleasant. Even though it is situated only two hours' drive from the capital, Bangkok, the family economies in the area are very different from those of people living in town. People still struggle to survive through agriculture, which is sometimes made more difficult by natural disasters. Many people have left their hometown to find jobs in other locations.

The school is located in an area that faces frequent drought problems and hot weather all year round. Amphoe Dan Makham Tia has borders with other four sub-districts of Kanchanaburi province: Amphoe Tha Muang, Amphoe Muang, Amphoe Chom Beung and Amphoe Suan Pheung. The majority of the people in the area work in farming: some own land for agriculture but some are employees in the farms. The communities in the area are settled along the fields and the houses are a long way apart. The temples and schools are central to these communities. The area is under the administration of the LAO – the Local Administrative Organization of Tambon Dan Makham Tia – which manages the allocation of the budget and resources for the local public services. The transportation in the area is fair: the area is well served by roads but there is little public transportation. There is no secondary school in the area. Therefore, only a small proportion of students can pursue higher education because of poverty. Most families cannot afford the cost of their children's transport to secondary school in the cities, even though tuition at public schools is free of charge. Therefore, the primary school in the community is very important to the parents and students because it can provide the basic needs for the students' lives and future career.

However, Banthayae School has encountered some difficulties in education management and service provision to the students in its community due to financial constraints. a hundred students, four permanent teachers and one temporary teacher. The school provides the classrooms from kindergarten and the primary levels

from Pratom 1- Pratom 6 (Grade 1 –Grade 6). All are 7 classes. The number of permanent teachers does not match with the number of the classrooms. The school needs to hire some more temporary teacher; however, the limited budget usually cause the teacher shortfall. The government per-head subsidy for students for the school is not enough to manage all of the school's activities. The school lacks teachers, a canteen building, school fences and roofs for the kindergarten playground. Some of these requirements are more urgent than others. To address these needs, the school may not be able to wait for the government but has turned instead to co-production from others. The community, which has witnessed the problems and sees the importance of education for its children, works with the school to co-produce education. Other stakeholders are also interested in collaborating with the school. The school has to resolve its problems and the students have to be prepared for their future. They need both academic and other skills.

Banthayae School provides not only education but also life skills. The Sufficiency Economy has been incorporated into the curriculum. It teaches students to conserve the mixed forest, butterfly lizards and traditional rice farming. The students learn how to raise catfish, pork and chicken. Moreover, they manage vegetation and process food from herbs in the neighbourhood as well as herbal products. They are taught all about these life skills by people from the community and the families themselves. Traditional tools and devices are used in the life skill lessons to conserve local traditions. The school also has support from the temple. The purpose of these life skill lessons is that the school wants the students to be self-reliant and treasure their hometown.

As in case study I, co-production from the Banthayae School neighbourhood stands out at one level: that is, input from a group of people in the community who are the representatives of families, parents, local authorities, and local citizens. The co-production from the community is the most outstanding. Moreover, private corporates and non-profit organizations are more significant than any other groups in the co-production of education in this case. Furthermore, the three dimensions of co-production of ESD are evident: that is, citizens' ability to co-produce in terms of having specific knowledge relevant for their input, their level of co-production, and their use of the supplied co-production materials (Jakobsen, 2012).

First of all, family co-production in Banthayae School is revealed to be significant to the case study. In general, family co-production, which is considered to be the second level of co-production, is necessary to the case study due to the fact that the school lacks sufficient personnel to complete the education service. The students' families thus help the school by co-producing and co-delivering lessons as requested. At the first level, in a similar way to case study I, the families commit to the school's requirements by ensuring that children complete their homework. At the second level, the families co-produce the education in the form of contributing knowledge and labour for the lessons and donating co-production materials that they might have at home. They help by giving labour to prepare the lessons, and then co-produce lessons when their knowledge is required in the classroom.

Community co-production, which shifts from an individual to a more collective group of people co-producing the education service, is also significant to the case study. At Banthayae School, community engagement is highly relevant to the co-production of education services and the community is involved in planning some services with the school in the form of representatives in the same way as in case study I. However, the community engagement in case study II is more intense: the researcher observed the presence of the community and students' families as part of the school's everyday routine. The community is very strong and is willing to support the school in order to keep it running and give back the service to the community. Even though the school is facing governmental subsidy constraints, the community has jumped into the discussion to try to find a solution. For example, people in the community voluntarily cook lunch for the students every day so that the school can use its budget for more necessary management activities. This is an example of the importance of citizen participation in the case study.

Co-production from other local government agencies such as the Local Administrative Organizations (LAOs) is present but very limited. However, co-production from non-profit organizations and private companies is more outstanding in this case study. An example of a government agency that co-produces the education service is the LAO, representatives of which collaborate with the school as members of the administrative board. They work collaboratively with the school in many activities, including local budget management. However, local governmental agencies

seem not to intervene much in the school's lessons. Most of them are more concerned with the contribution of materials and facilities to the school. Another example is co-production from members of outside universities: students and lecturers. They come to the school and co-produce the education by helping to supply its facilities and premises. All the school's buildings were built through collaboration between soldiers, families and the community, and volunteers such as university students, who offered their time and labour for free.

Finally, the case study also demonstrates co-production from other stakeholders such as non-profit organizations and private companies. The co-production from these sectors usually happens in the same way as it happens with the earlier sectors. The researcher observed that there is no co-planning or co-delivering of the services; however, the sectors contribute to education by supplying the materials to the school to make the co-production happen. For example, Tid Tang Thai Institute (Chumchondee), which is a non-profit organization under the Crown Property Bureau Foundation, co-produces the education by sharing knowledge and donating co-production materials. The objective of the organization is to support the economies of strong communities where the Sufficiency Economy is applied. Banthayae School is considered a role model as a Community Learning Centre to encourage SD. For this reason, the institute supports the school in facilitating its activities by providing materials and tools for the implementation of education. In this case, they donated a solar power system so that the school could save money on electric bills and teach the students about green energy. In these sectors, the contribution of the supplied co-production materials is particularly outstanding. These examples help to provide an overview of the co-production of education in the case study.

The school was tested against the twelve indicators using in-depth interviews. Eight stakeholders who co-produce and implement education at this school were involved in the research.

5.2 Result of case study I: Overview of the significance of each indicator

The results showed that the twelve indicators are highly relevant to the practices and academic activities of the school. These indicators (collaborative approach and partnership, community engagement, cultural adaptation, democratic participation, equitability, interdependence, interdisciplinary approaches, goal of sustainable future, leadership and contingency approach, mutual benefits, self-reliance and self-efficiency and. technology and media usage) were all present in the case study at slightly different levels. Analysis of the data using NVIVO 11 software presents interesting information on the frequencies of these indicators. The data and the interview excerpts are presented in the following sections.

5.2.1 Collaborative Approach and Partnership

The collaborative approach and partnership refer to being partners and joining together to develop a model of joint planning, implementation and evaluation to share both risks and profits. Moreover, the approach shows that services provision should be delivered in a participative and equitable way. This case study presents aspects of this factor in practice; however, it may be slightly different from the other cases.

The collaborative approach and partnership as an aspect of the implementation and co-production of ESD were mentioned only occasionally in the interviews. Only three of the eight respondents mentioned this aspect as a factor in the implementation and co-production of ESD, of whom two referred to these terms only once. The graph below displays the frequency of appearance of this indicator:

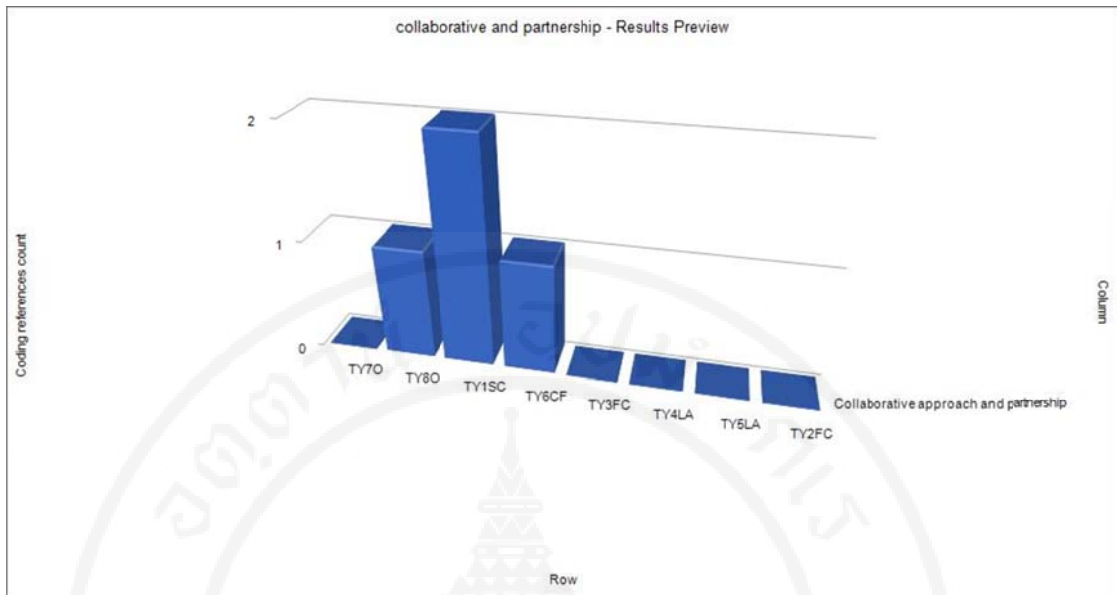


Figure 5.1 Frequency of Collaborative Approach and Partnership in case study II

The reason why the school becomes more well-known is because we have networks like the Local Administrative Organization (LAOs). They try to push us to be a role model for other schools. They present us to the public. When we are more well-known, we get more sponsors and donors. (TY80, 23rd Sept, 2016)

In this aspect, the school is partnered with many organizations and networks, which try to participate in its activities. As it is a small school which has succeeded in using community involvement to solve the problem of budget inadequacy, it has gained a lot of respect. For this reason, it is a role model for other schools in terms of management. The school's extra-curricular activities make it self-reliant, with some aid from external organizations such as the Tid Tang Thai Institute (Chumchondee).

The school receives donations from external donors because of social media. When we people get the information about the school, they find us on social media, and then try to help us. After that, when more people know, it creates a kind of network among them in helping our school and other schools as well. (TY1SC, 17th May, 2016)

As well as organic networks, social networks are also important. Because of the rapid communication channels of social networks like Facebook or Line, the school has become more well-known and attracted more attention from other organizations. When it receives aid and donations of finances and facilities from outside, it posts and shares photos of the activities on its website and Facebook page. These channels quickly disseminate the information and make the school more visible online. This encourages more contacts to visit and donate money to maintain the activities. Moreover, when this kind of thing is repeated annually, many donors create collaboration and networks among themselves, as they can see that Banthayae School is a very good model of a school in which other people co-produce activities.

Finally, local networks are also important actors in the collaborative approach and partnership aspect. The networks among the schools in the educational area also support activities and share knowledge. By means of meetings and school visits from administrators, they handle knowledge management (KM). Furthermore, representatives from the local career networks come to the school to give lessons when required. The school curricula are based on both academic and career-building subjects according to the Sufficiency Economy. For example, for vetiver grass planting lessons, the school invites people from the vetiver grass planting network to give lessons and plant grass in its learning garden. All in all, a collaborative approach and partnership exist in the school management in this case study.

As in case study I, equal terms of partnership among service providers and service users is evident. The service users – that is, the students and their families – are still not able to co-plan with the school in all policy-making. Nonetheless, the community's willingness to participate in school activities, from the creation to the implementation of policies, is obvious.

5.2.2 Community engagement

The process of working collaboratively with and through groups of people affiliated by geographic proximity or special interest is a powerful vehicle for bringing about environmental and behavioural changes. It can help in mobilizing resources and influence systems, change relationships among partners, and serve as a catalyst for

changing policies, programs, and practices (Fawcett et al., 1995). It is the most significant factor in this case study.

All eight respondents gave opinions on community engagement aspects as an attribute of implementation and co-production of ESD. This indicator is highly relevant to the ESD practice in this case study. One of the eight respondents even mentioned it four times and another referred to it three times, while the others all talked about it at least once. The graph below shows that the aspect was strongly highlighted:

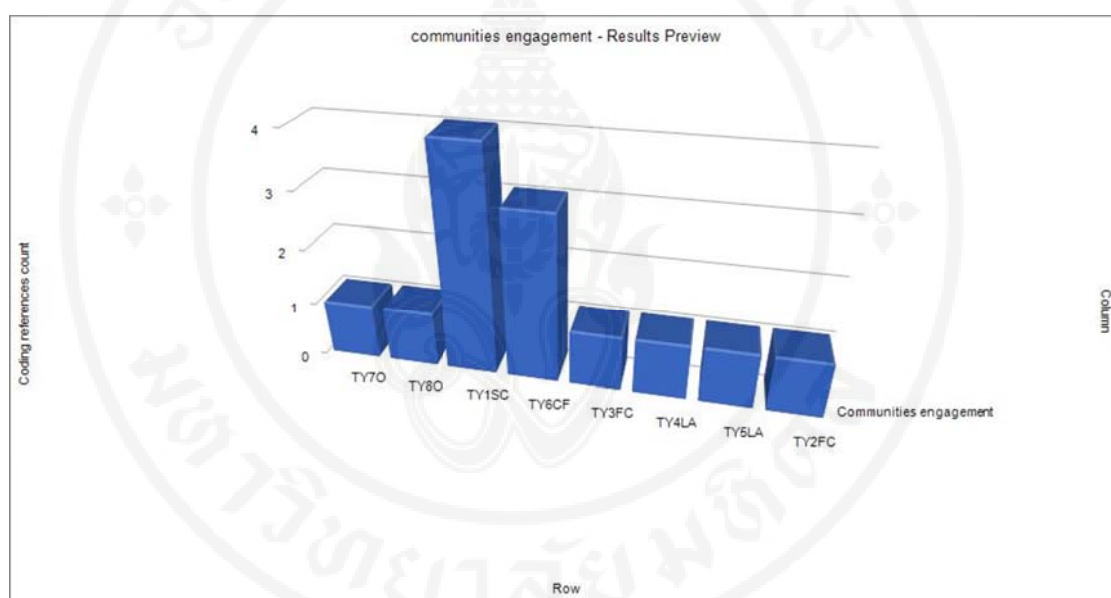


Figure 5.2 Frequency of community engagement in case study II

I agree with the community engagement aspect. If people ignore the school, the teachers will be discouraged. But here most people collaborate with the school. (TY4LA, 18th May, 2016)

The community engagement aspect is another indicator which is highly concerned with the co-production and implementation of ESD. Community engagement is obvious in this case study. The community engages with the school in many duties: for instance, as members of the school board, lecturers, activity promoters, etc. They try to maintain the school for their children. In the past, the school faced closure due to internal management problems and external factors such as

a governmental policy to merge small schools together. The power of the community helped to resist these changes through their votes and by helping one another to solve the problems until the school could continue, with the belief that the school has to exist, together with the community and the temple.

I think it is very important because the children come from the community. The children obey their parents. When they are at school, they obey the teachers: the teachers tell them to respect their parents. When we tie the school with the community, it is a good thing, because the community is based on a beautiful culture. If they stay with the school, the culture will not fade away. (TY70, 23th May, 2016)

The above quotation shows that there is a relationship between the community and the school. Moreover, the school is a place where the beautiful culture of the community is transmitted to the students, generation by generation. This is why the community engages in school activities where possible. Some people donate tools from their houses to the school learning centre, whose purpose is to archive traditional artefacts from the professions in the community. Some become mentors to teach the children what they have in the community.

In my opinion, the greatest mentors of the children are the teachers. Besides the teachers, the community here is also important. The community respects the teachers who manage the education for their children. The teachers are the ones who manage it and present it to the community. Then the community engages in giving feedback or in co-producing something. (TY1SC, 17th May, 2016)

The community and the children's families still respect the school and voluntarily collaborate with it. It is the school that arranges the classroom and plans the lessons, and then persuades the community to co-produce them. This is how the school plans to transfer knowledge from generation to generation.

5.2.3 Cultural adaptation

The process of reviewing and changing the structure of a program or practice to be more appropriate to the needs and preferences of a particular cultural group or community is regarded in this aspect (Samuels et al., 2009). Cultural adaptation proved to be one of the most significant indicators. All eight respondents mentioned it during their interviews: one referred to this aspect four times and another talked about it twice. The graph below displays the frequency of appearance of this indicator:

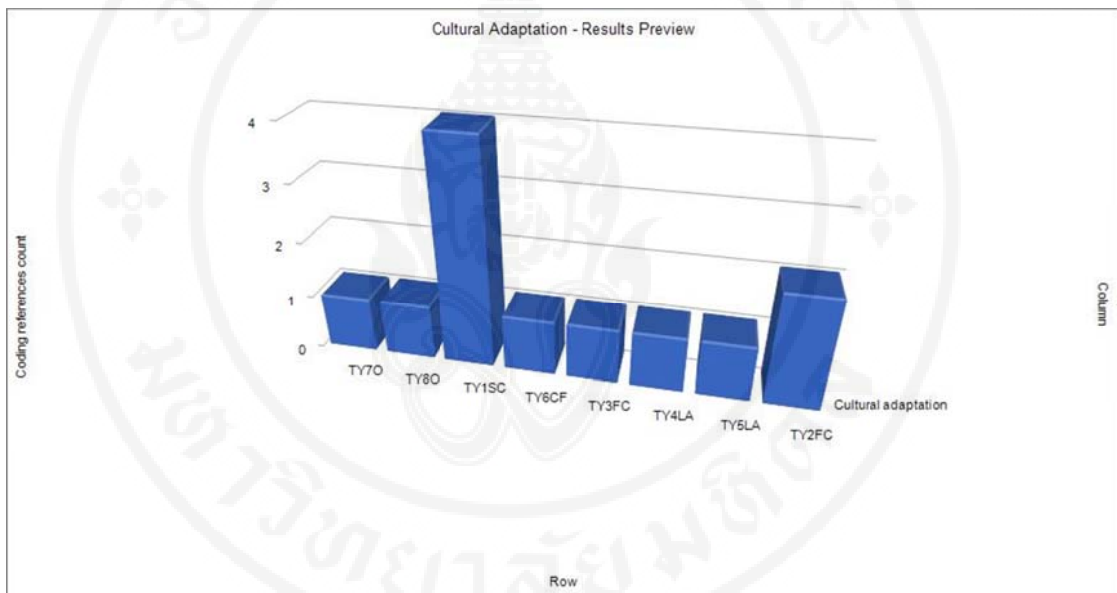


Figure 5.3 Frequency of cultural adaptation in case study II

The cultural adaptation indicator proves to be highly relevant to the coproduction and implementation of ESD. It is essential to take the culture and tradition into the curriculum, including the way people earn their living. In the researcher's opinion, the central curriculum according to the National Education Acts is for students' academic skills, but the school's extra-curricular activities are important for the students' life skills. They will grow up, live and work in this area, in their hometown. Therefore, cultural adaptation is a very interesting point to discuss. One respondent answered the question about cultural adaptation as follows:

I see that the school tries to conserve traditions. In this area, there are a lot of butterfly lizards. People raise them for a living. The school has added this to their curriculum in order to keep the old tradition and culture alive. (TY8O, 23rd Sept, 2016).

The cultural adaptation aspect is outstanding in this case study. The school has extra-curricular lessons which support this policy, known as *Moderate Class, More Knowledge*. Among the lessons which help in building students' careers, the school attempts to conserve tradition and nature. Butterfly lizards are raised in the playground in order to provide a learning space for the children to observe their life cycle. In fact, butterfly lizards are a commercial species that is nearly extinct. The conservation of butterfly lizards has two advantages: it maintains tradition and creates a profession for the children at the same time.

We adopt the local wisdom to teach in the classroom according to the policy of *Moderate Class, More Knowledge*. When the government implemented this policy, we didn't have any problems with it, because we already had this kind of classroom. We invite local mentors to give lectures. (TY1SC, 17th May, 2016)

The 'Moderate Class, More Knowledge' policy is not new to the school, which has been arranging life-skill lessons for a long time through co-production of local wisdom. These used to be extra-curricular activities, but when the government implemented the policy, schools became autonomous in managing these classes every afternoon. The extra-curricular activities became part of a top-down policy, implemented with co-production of families and communities, who are masters of these topics thanks to their experience.

We conserve the old traditions in the school in terms of tools and devices as well as knowledge. For example, for rice farming, it's hard to see the planting of germinated seedlings by hand. We keep this practice to teach the students. (TY5LA, 17th May, 2016)

Co-production in this school is demonstrated in the form of supplying of co-production materials as well. People in the community donate out-of-date traditional agriculture tools to the Learning Centre to enable the school to conserve the region's past agricultural traditions. The tools and devices are used in lessons on local traditions to demonstrate how the students' ancestors did their jobs.

5.2.4 Democratic participation

Citizen participation is a basic practice in democracy: it is the key role of citizens in democracy and builds a better democracy. All eight interviewees mentioned the democratic participation factor in their interviews, with three acknowledging it twice. This indicator thus seems to be significant. The graph below shows the frequency of the appearance of this theme in the interviews:

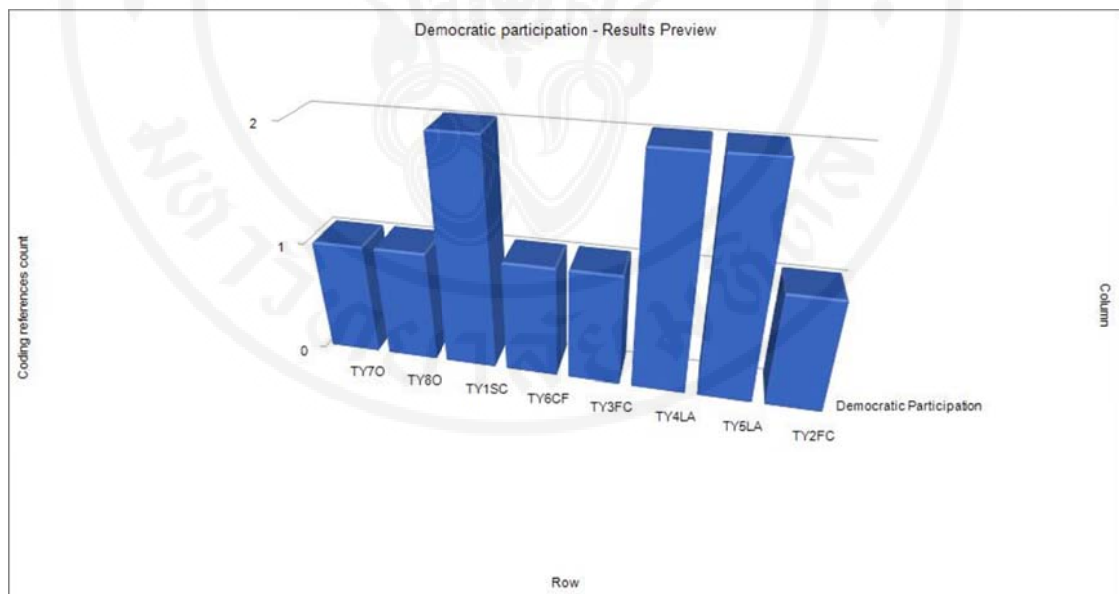


Figure 5.4 Frequency of democratic participation in case study II

In the words of one respondent, “It’s exactly the democratic participation. In parent meetings, meetings of the school’s administrative board, town meetings, etc., we respect the vote. This is the rule in democracy” (TY6CF, 17th May, 2016). Democratic participation is one characteristic of the case study which is a core in any practice in society. The people acknowledge their rights and respect the vote. Most activities in Thai society are based on the majority vote. In the weekly town meeting,

people in the community come to the small hall in front of the school to acknowledge the plans and listen to what is happening in the area, to give their voices and to vote. This is a good example for the students, as it enables them to see their parents and people in the neighbourhood showing how democratic they are. It is a kind of norm that they can follow when they grow up. However, there is another interpretation of democracy which is also evident in the case study.

In my opinion, democracy means the respect for human values. The Banthayae School has this aspect. First of all, the students respect one another and they respect seniority. ... they can think on their own; at the same time, they listen to the voice of the majority. They respect the vote. (TY70, 23th May, 2016)

Regarding respect for human values, the case study school continues meaningful practices in its routines. The students respect one another and also respect seniority. The school has adopted knowledge management by having the senior students transfer knowledge to the juniors. At the same time, they listen to the voice of the majority. For example, the students can vote on what activities they are willing to do. From these votes, the teachers consider the possibility of having the chosen lessons in their afternoon class. Then, they go on to implement them by inviting people who can give lectures on the topic and co-produce the classroom. This is a way in which the students learn and embody democracy in their daily lives.

5.2.5 Equitability

According to the definition mentioned in Chapter II, equitability is characterized by the quality of equity or fairness, and by what is just and right, fair; reasonable. The research examined the case study in this aspect. The equitability indicator appeared to be concerned with the implementation and co-production of ESD. Everybody referred to it as a common attribute of the context. One respondent mentioned it twice. The graph below shows how many times people mentioned equitability in their interviews:

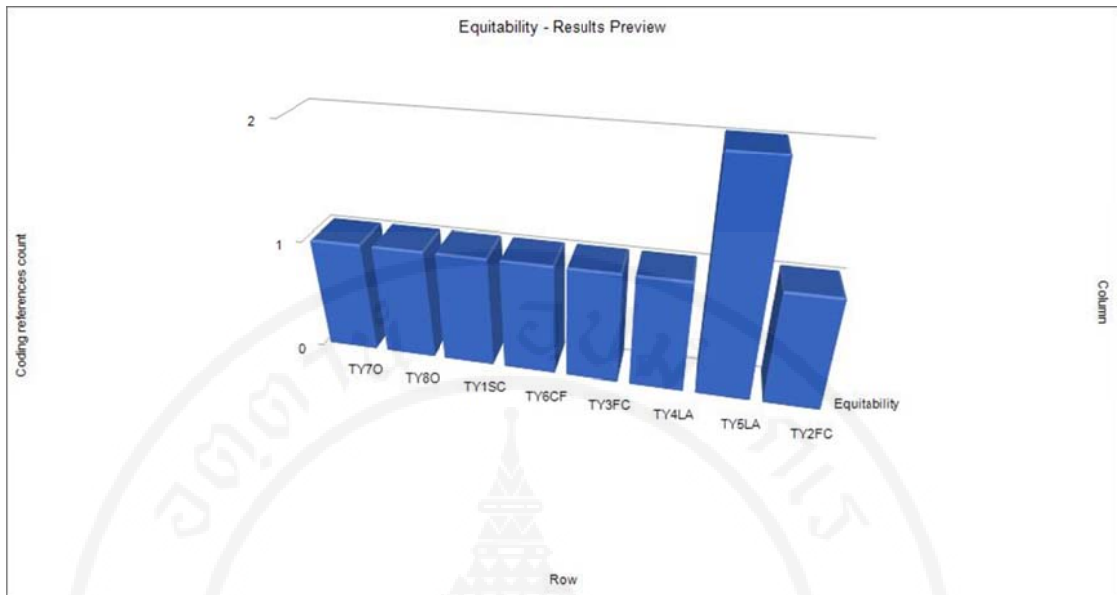


Figure 5.5 Frequency of equitability in case study II

This is a small school which receives only a small amount of subsidy from the government. In the past, the school faced closure because of its size. But the community saw that it would cause problems with access to education for the children in the neighbourhood. We fought until the school was allowed to continue. (TY7O, 23th May, 2016).

Access to education is one aspect that must be considered in order to achieve equality in society. The community saw that the only way to have equal access to education for their children was to keep Banthayae School open. They thus gathered together and tried to solve the problem by signing objections to the local government. As a result, the school was kept open with a new management team, and people in the community can still send their children to study here, unless they find it difficult to support their children's education.

As explained by one respondent, "Money matters and family finance hinder access to education. However, the school has tried to help students by finding donations and scholarships" (TY8O, 23rd Sept, 2016). Family finance is an important problem. Having a school located in the neighbourhood makes it easier for younger children to access their basic education, but does not help with higher education. A high percentage of students in the community are not able to pursue their study at

secondary schools for financial reasons. In the respondents' opinions, at least basic education should be available for the children. This is why the community showed their empowerment to keep the school open. The school itself has also been trying to keep going, although it usually needs more external funds.

One stakeholder commented that, "It's equal. The school tries to distribute scholarships equally to the students. It's fair" (TY6CF, 17th May, 2016). The characteristics of the community itself demonstrate the aspect of equitability. Moreover, in town meetings based on democratic practices, the distribution of finances among town facilities is equally managed by majority votes. One respondent strongly emphasised this and stated that it is shared equally: "Everything in this village is equally distributed. It comes from a vote. The budget needs to be used fairly" (TY4LA, 18th May, 2016).

5.2.6 Goal of a sustainable future

The need to balance the resources of today and of the future is the central concern of sustainability. People wish to supply resources to future generations, but also want to have a better future. As a result, the goal of accomplishing sustainability is one of the important features in this research. Achieving a sustainable future is the ultimate goal of the implementation and co-production of ESD. Six of the eight respondents mentioned this goal, but they each referred to it only once during the interviews, as shown in the graph below.

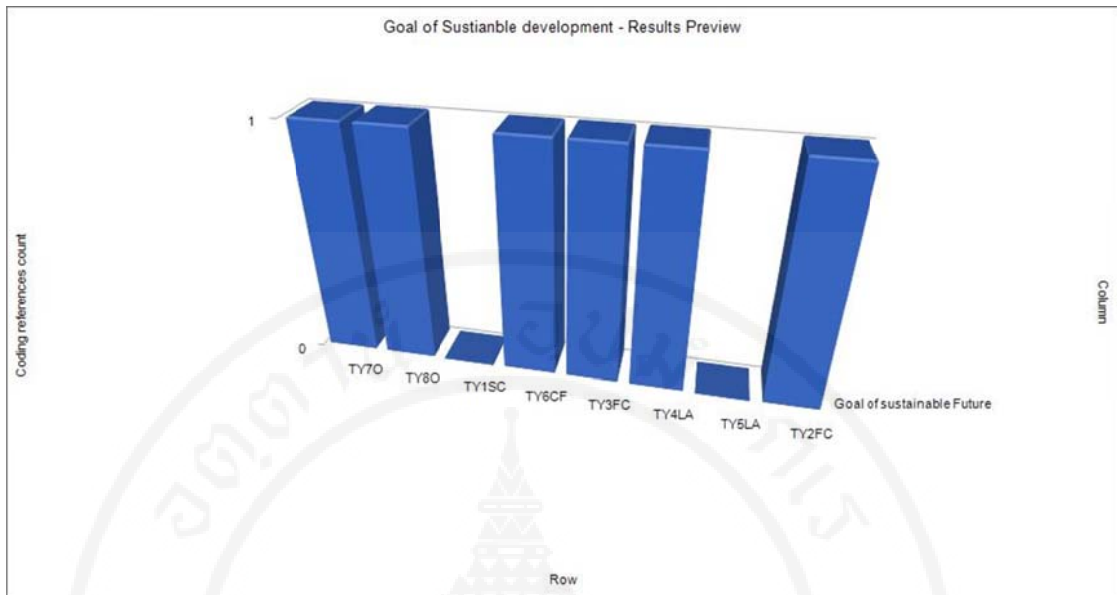


Figure 5.6 Frequency of Goal of a sustainable future in case study II

In the words of one interviewee, “In the future, Banthayae School should be a learning centre for adults at the national level. I think the activities it provides are so good that people throughout the country, not only in this province, should make use of them” (TY70, 23th May, 2016). This respondent, who is a stakeholder in the co-production of children’s education at Banthayae School, hopes that the school will provide a model to others at the national level in order that the country will have a more sustainable education. However, the definition of sustainability is contested and requires interpretation. In different contexts, sustainability contains different meanings.

Sustainability is about being able to stand up by ourselves. Everybody in the community can join in to create sustainable development. I think that the school is going to the right way, when the students complete their studies here, they know how to do their jobs and earn their living (TY80, 23rd Sept, 2016)

Here, the definition lies in the ability to “stand up for oneself”, according to a respondent who was talking about the community’s goals. The people in the community hope that they will become more self-reliant. However, the solution is still

not clear-cut. In the hope that sustainability will be achieved in their children's generation, they are willing to help with their children's education activities even though they do not know exactly what the solution should be. The first thing that people think of is education for their children. That is why they are willing to co-produce education with the school.

Yes, the school has this goal. They train children to know how to do their jobs. When they have finished school, they can follow their careers. Therefore they can earn their living. (TY2FC, 17th May, 2016)

The quotation shows that people hope for a better and more sustainable future for their children. As mentioned earlier, the definition of sustainability and a sustainable future is contested and requires local interpretation. During the interview, one respondent gave an interesting interpretation that links other indicators such as interdependence with the goal of a sustainable future.

The goal of a sustainable future here is that the school continues, together with the community and the temple. It was about to be closed down but we tried to sort things so that the school could continue. The people in the community have to collaborate with the school staff. We have to help each other. (TY3FC, 17th May, 2016)

5.2.7 Interdependence

From the earlier quotation, we can see that independence is relevant to sustainability. Moreover, the co-production of ESD also requires interdependence. Interdependence proved to be one of the most significant indicators in this case study. Every respondent mentioned it: one person referred to the aspect four times, another referred to it three times, three people talked about it twice and the rest acknowledged it once. The graph below displays the frequency with which this indicator was mentioned:

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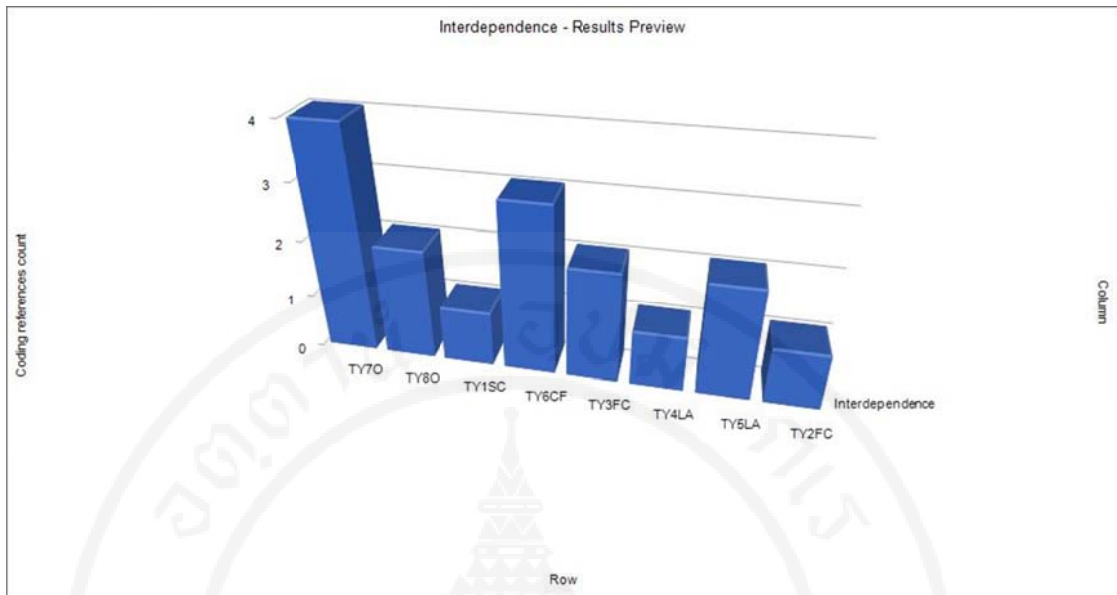


Figure 5.7 Frequency of Interdependence in case study II

100% people need to be interdependent. I remember the King Rama IX's speech and I take it seriously that home, temple and school have to be interdependent (TY6CF, 17th May, 2016).

With regard to the interdependence aspect, the case study emphasizes the importance of BORWORN (home, temple and school) theory, which argues that collaboration among these three parties is necessary to support education. In the same way as Bansankong School, Bantthayae School shows the characteristics of interdependence by having all these parties share and participate in many school practices. The people here believe that everybody has to commit to their duties in supporting these three institutions. Without any one of these units, the community cannot be strong and complete.

I think that interdependence is very important because we cannot stand alone. We need collaboration. Home, temple, and school (BORWORN) are also important. Parents have to teach their children to stick with the temple and dhamma. Parents themselves should stick with the school and the teachers. These three things need collaboration. (TY7O, 23th May, 2016)

It can be concluded that the implementation and co-production of ESD in the case study focuses on the interdependence among three institutions: home, temple, and school (BORWORN). However, the case study shows that there is interdependence among other agencies as well, such as the school and the LAO, and with other external networks. In the words of one respondent, “Education development needs collaboration from a lot of parties. The teachers, who are like the representatives of the government, the students, the communities, all have to collaborate to have a sustainable education” (TY7O, 23th May, 2016). This is the reason why the co-production of ESD is evident in this case study.

5.2.8 Interdisciplinary Approaches

Uniquely different from a multidisciplinary approach, the interdisciplinary approach is the teaching of topics from more than one discipline in parallel with each other. It is not a cross-disciplinary approach, where one discipline is crossed with the subject matter of another (Jones, 2009). The interdisciplinary approach represents an integration of disciplinary insights (Haynes, 2002). The interdisciplinary approaches indicator is concerned with the implementation and co-production of ESD. Six of the eight respondents referred to it as a common attribute; furthermore, three people mentioned it twice. The graph below shows how many times people made reference to interdisciplinary approaches:

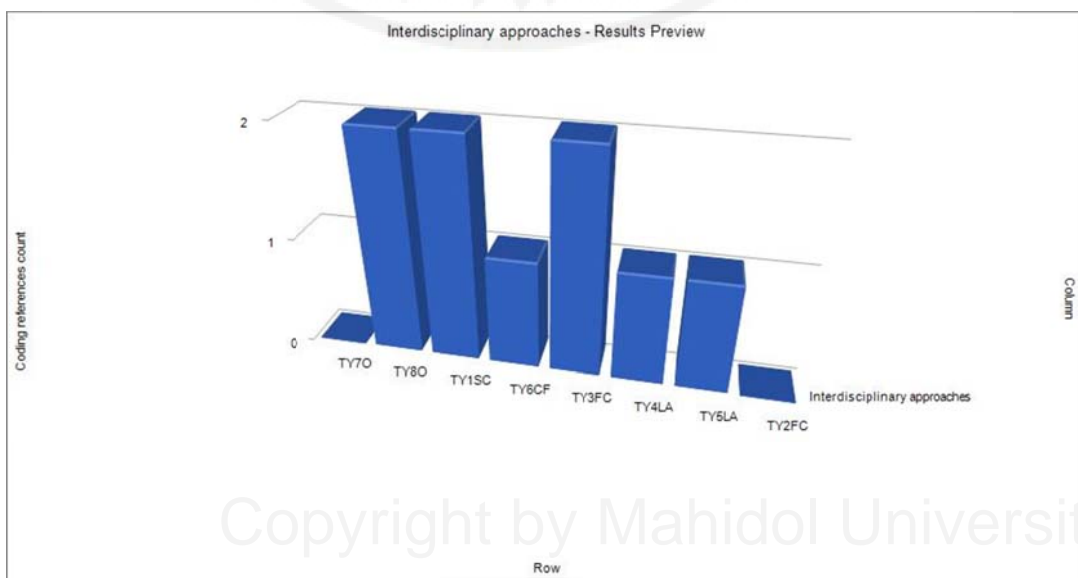


Figure 5.8 Frequency of interdisciplinary approaches in case study II

A stakeholder mentioned that “The school applies the buddies system to transfer knowledge from seniors to their juniors, so the knowledge won’t disappear... they invite ex-students to visit the school and mentor their juniors when they have time” (TY1SC, 17th May, 2016). As well as extra-curricular activities, the school also employs knowledge management (KM) by using the buddy system to transfer knowledge from senior students to junior students. It addresses the shortage of teachers by hiring extra teachers from its own budget. However, the problem is not only the number of staff but also how to disseminate knowledge and education equally. In the skill-oriented classroom, the buddy system works well. It helps to address staff shortages. The senior students, such as those in grades 5 and 6, can co-produce the classroom. However, not all parents agree with this kind of activity.

Yes, we do this. Anyway, as I mentioned before, not every parent appreciates it. I am a mediator who compromises on this matter between the school and parents. The school has to rearrange their classrooms a bit and the parents have to change their attitudes a bit. (TY3FC, 17th May, 2016)

The attitudes of some parents are geared toward academic excellence for their children. They are not happy when they see their children learning outside the classroom. That is why some are not willing to co-produce any classes and think that education is the duty of teachers alone. This shows that the co-production of education needs a good understanding about what contributors give and what they gain. Furthermore, what they gain has to be what they see they as benefits for their children. In this case, the school needs a mediator who can help to improve understanding about their classrooms. In this case, it is the leader of the community.

5.2.9 Leadership and Contingency Approaches

The best way to organize depends on the nature of the environment to which the organization relates (Scott, 1992). Additionally, a leader is someone who influences one follower or more followers who have diverse gifts, abilities, and skills to the organization’s mission and objectives. In the interviews, every respondent mentioned the leadership and contingency factor. One person acknowledged it twice.

This indicator proves to be significant. The graph below shows the frequency of the theme:

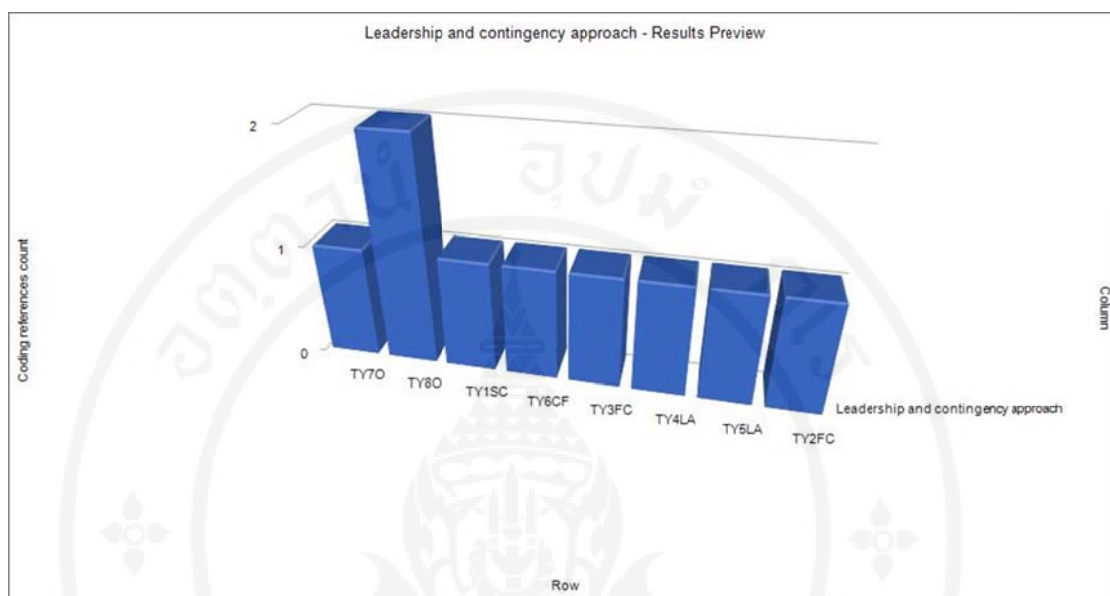


Figure 5.9 Frequency of the leadership and contingency approaches in case study II

Leadership is important for both teachers and students. Good leaders should sacrifice themselves for others. The teachers here do it quite a lot ... The leadership in students is also obvious. We can see that from the student buddy system. (TY7O, 23th May, 2016)

Leadership is vital at every stage of the implementation and co-production of ESD: in the community, in the school, in the students, and in the parents. In the community, the leaders remain an essential factor in strengthening the community itself. As one respondent said, “The members tend to obey their leaders” (TY6CF, 17th May, 2016). When the leaders agree to support and co-produce education with the school, the members are likely to follow them. This helps to facilitate the implementation and co-production of ESD.

The leadership in the school itself is conveyed at different levels. The teachers and administrators apply leadership and contingency approaches in their activities. They are the leaders of changes: they adopt the extra-curricular classroom approach and invite people to give lectures on their specialist knowledge. Moreover,

they encourage participation and collaboration from most stakeholders. In addition, they embed the leadership and contingency approaches to their students via the classrooms and the buddy system. The students show their ability to be good leaders in the classrooms and in school activities. This emphasizes the importance of the leadership and contingency approaches to the implementation and co-production of ESD.

The leaders are very important, especially in education. If people have faith in the leader, everything will be done easily. If they gain the respect once, they can do it a second and a third time (TY1SC, 17th May, 2016).

The statement shows that any task is easier when people have faith in their leader. However, leaders have to have a good vision. Another thing that can help in the successful implementation and co-production of ESD is mutual benefit, which will be discussed in the next section.

5.2.10 Mutual Benefit

Mutual benefit is a highly significant aspect of the implementation and co-production of ESD. Seven of the eight respondents mentioned mutual benefit as a factor that enhances the implementation and co-production of ESD. One respondent referred to the term three times and another acknowledged it twice. The graph below displays the frequency with which this indicator was mentioned in the interviews:

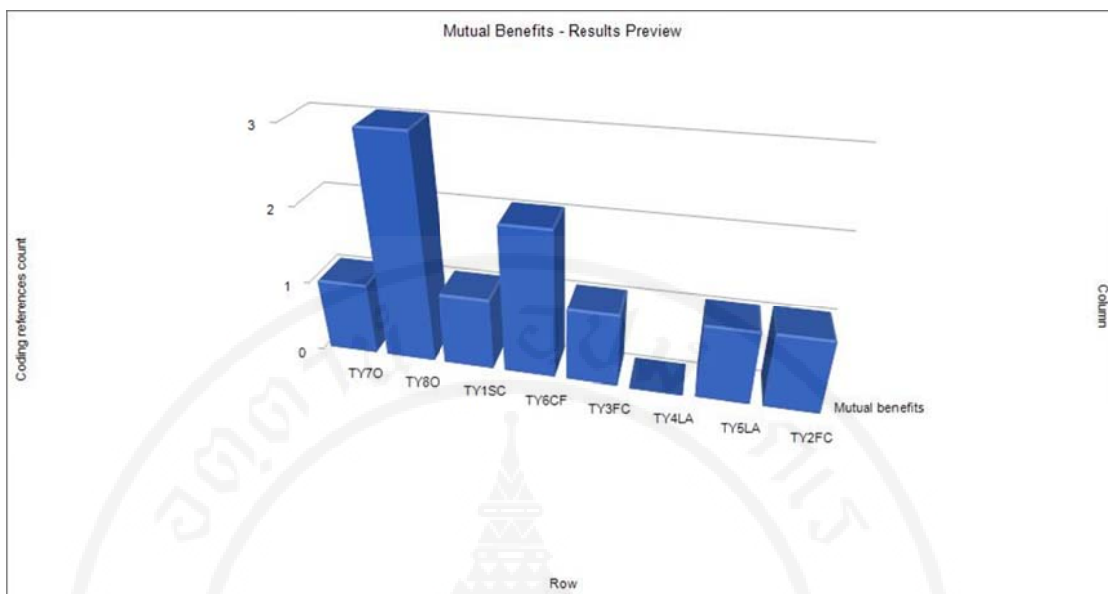


Figure 5.10 Frequency of mutual benefits in case study II

We do not give money to the people who come and give lectures at the school. I think that what they and we receive are friendship and pride. I think they are proud of themselves because they are teachers at that moment and they give lectures about what they are good at. They know those things the best. (TY1SC, 17th May, 2016)

Obviously, people who engage in the implementation and co-production of ESD receive intrinsic rewards in return, in the form of dignity and pride. For example, people with local wisdom are invited to give lectures at the school because they are the ones who know best about these issues. Even though they are not teachers, they function as instructors in the classroom, no matter what education and degree they have received. Furthermore, they gain friendship from these activities. Finally, they feel that they can give back to their community and that the benefits will go back to their children, their relatives and their neighbours.

In the bigger picture, Banthayae School can serve as a model of the best practice with regard to community engagement in implementing and co-producing ESD. An external stakeholder who helps to disseminate the knowledge and model of the school feels that the ESD practices of the school will be useful to more people in the country:

Thousands of people could benefit from this school if we could do a road show which has the purpose of strengthening communities. We intend to raise the example of Banthayae School as a model to show that with this type of education, the students – the future population of our nation – are self-reliant. (TY7O, 23th May, 2016)

The goal of making people more self-reliant is the reason why people give the school such strong support to enhance their ability to sustain themselves. They co-produce the education, not in the classroom but in terms of facilities to sustain in the long run. For example, one company donated a solar cell system to the school. As a result, the school saves on its electricity bills and has clean energy to use. The mutual benefits are reflected in many aspects: the school can manage its restricted budget more efficiently, indirectly save the environment and teach students about the clean energy. All in all, this enhances the ability of the population to sustain itself.

5.2.11 Self-reliance and Self-efficiency of Population

All eight respondents mentioned the self-reliance and self-efficiency of the population as an attribute of the implementation and co-production of ESD. Half of them mentioned it twice. The graph below shows how this aspect was highlighted:

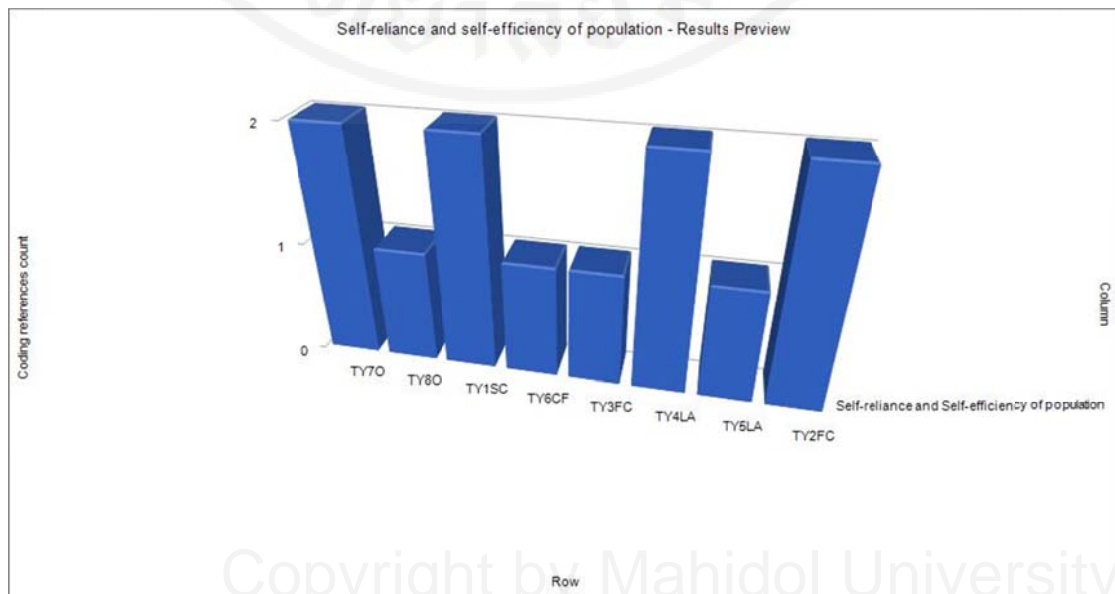


Figure 5.11 Frequency of self-reliance and self-efficiency of the population in case study II

Nowadays, we are mostly self-reliant. We try to adapt the Sufficiency Economy into the classrooms. We do not just wait for the subsidy. It's not enough. We can generate small amounts of money and food for the students. The students here have both academic and life skills. If they don't get the opportunity for higher education, they can earn their living through the life skills they have. The students are self-reliant and the school is as well. (TY1SC, 17th May, 2016)

At the school level, teachers are trying hard to educate student to be self-supporting by setting an example. The school itself proves to be a learning place for students and others. It shows students how to manage themselves, to be reflexive to all problems and try to solve them in a more sustainable way. The school attempts to make use of the lessons that it co-produces with the students, their parents and the community. They collect vegetables for their lunch and sell products to earn some money in return with the help of the community. This is not a single method to support themselves. They do a lot of things and pass these lessons on to their students by letting them co-produce the classrooms.

However, in the bigger picture, the people in this area are still struggling. One said, "We want to be self-reliant but somehow and sometimes we cannot. For example, we grow vegetables, so we will have enough to eat and to sell. Anyway, external factors, like natural disasters or drought, hinder this" (TY2FC, 17th May, 2016). People in the community still have some difficulties in earning a living. Due to natural disasters that affect agricultural production, some people find it hard to think about anything except their family finances. Intervention is needed, such as help from the government in educating people to have two or more occupations, or more education in ESD. Many of them acknowledge that collaboration and participation could help. As one stakeholder said, "Family finance is still a problem; however, if we collaborate, we can achieve our goal. If everybody collaborates, we can complete every task" (TY6CF, 17th May, 2016). In this case, the school may help the community by giving the ESD practice to the children and the community in order that they will become more self-reliant.

5.2.12 Technology and Media Usage

The technology and media usage indicator relates to the implementation and co-production of ESD. Every respondent referred to it as an important attribute; furthermore, half of them even mentioned it twice. The graph below shows the frequency with which technology and media usage arose in the interviews:

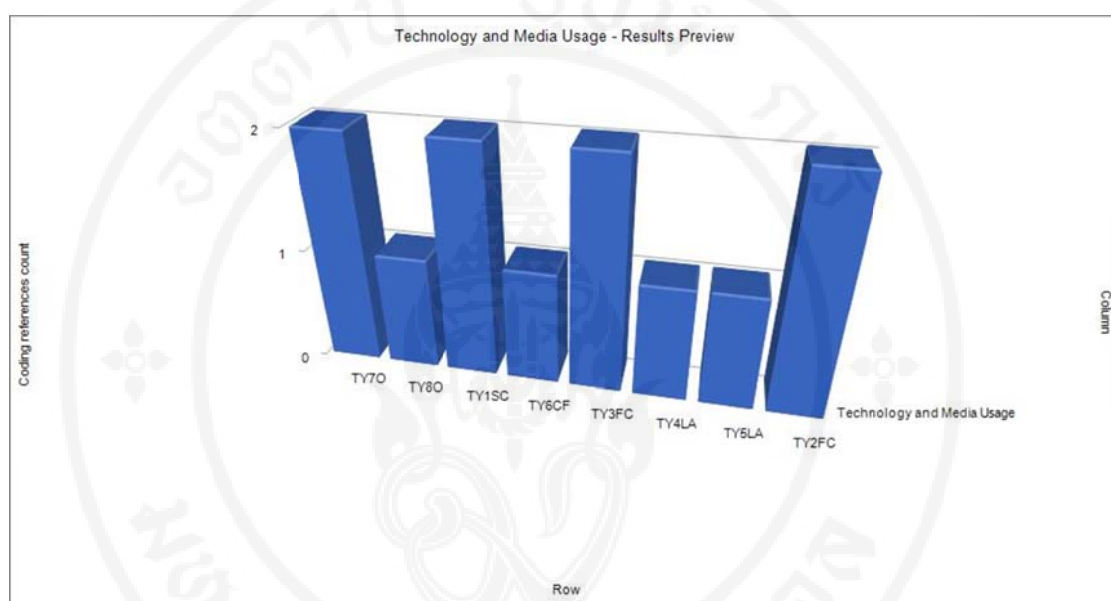


Figure 5.12 Frequency of technology and media usage in case study II

Technology and media usage thus appears to be very important in this case study. Much of the school's help and collaboration from outside come via social media, which is used as a tool for promoting the school's activities: "It helps a lot. The school has been developed so far due to social media" (TY1SC, 17th May, 2016). In the case study, technology and media are used as tools of communication more than teaching tools in the classroom. Another respondent said, "They are modern teachers. They present their activities via social media. Therefore, people far away know what the school is doing, what the school needs" (TY7O, 23th May, 2016). With the help of these tools, the school has developed considerably.

Many think that technology and media usage is both an advantage and a disadvantage. Therefore, technology and media should be used thoughtfully. Parents' intervention is needed when the students use these tools. The following interview

excerpt is an example of how technology and media usage can facilitate the implementation and co-production of ESD from other stakeholders:

The school has a Facebook page. Sometimes I am absent from the school meeting, but I can catch up on news and updates from Facebook. Sometimes they use this channel to announce upcoming events and how they need parents to collaborate. (TY2FC, 17th May, 2016)

Technology and media usage can be a tool to record incidents or school activities. Moreover, it helps to disseminate knowledge and necessary information to the stakeholders. If people know how to make use of these kinds of technology, they can make the most of them. They need to know how to apply such tools to the education provision and the co-production of education. There is no need for advanced technology that requires a lot of investment: basic technology with knowhow can help with the co-production of education.

5.3 The frequency of indicators as significant factors in the implementation and co-production of ESD

When the graphs of the frequency of the indicators mentioned during the interviews are put together, a new graph provides a meaningful picture of the significance of each indicator, as shown in Figure 5.13 below:

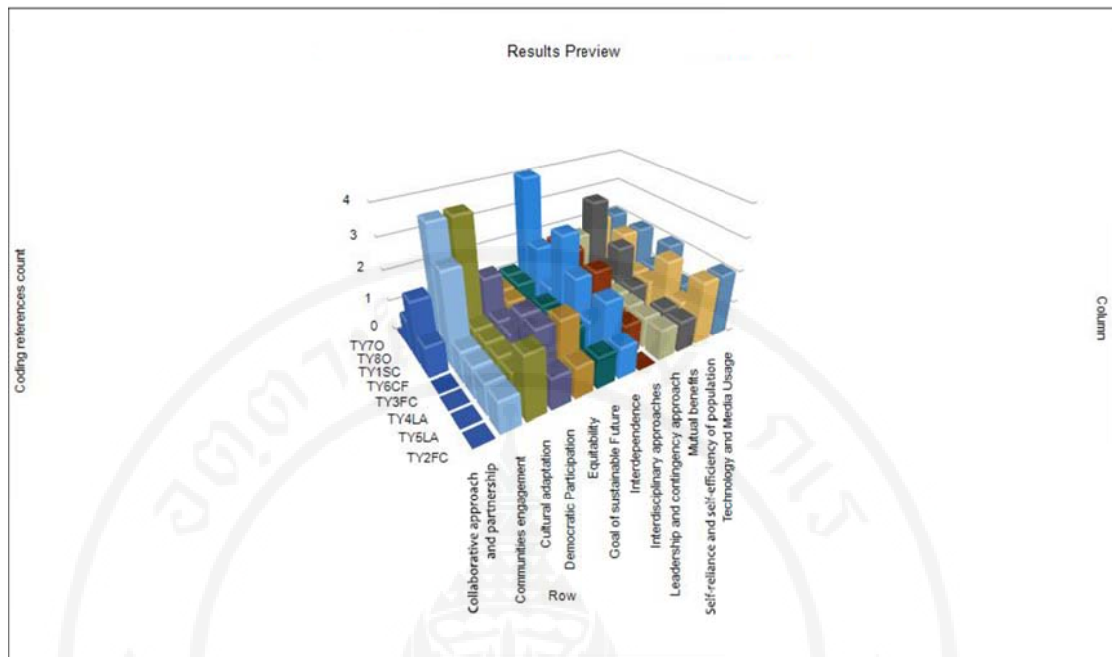


Figure 5.13 Frequency of indicators in case study II

The graph shows that there are six particularly significant concepts. These are: mutual benefits, technology and media usage, self-reliance and self-efficiency of the population, interdependence, cultural adaptation and community engagement. When these key indicators are put into graphical form, the following result is obtained:

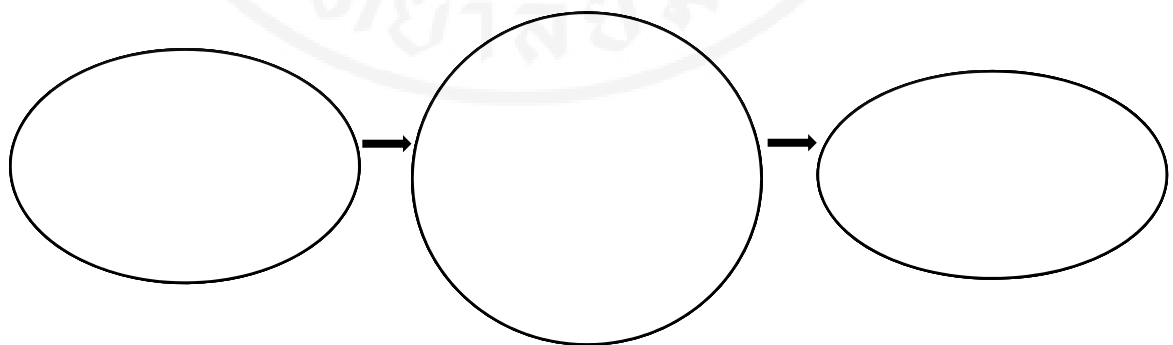


Figure 5.14 Cycle of implementing and co-producing ESD with the most significant factors in case study II (Author’s figure)

According to Addodorn (2011), a paradigm shift in strategic research for sustainable development is required. Moreover, measurement and evaluation strategies are required for sustainable development. Finally, it is necessary to shift the paradigm

of curriculum strategies for sustainable development. The case emphasized the statement that SD needs a paradigm shift in curriculum strategies from top-down to bottom-up practice. As shown in the previous section, cultural adaptation and community engagement, which have the characteristics of bottom-up policy implementation, are outstanding in this case.

In the same way as in case study I, the most significant indicators are in the process of implementing and co-producing ESD in the cycle. Cultural adaptation and community engagement gained the highest number of citations during the research. This helps to confirm that co-producing ESD needs to focus on the process. However, the indicators in the input are also significant, especially interdependence. Interdependence was referred to four times, while there were three references to mutual benefits. This indicates that in this case study, the input and process are more focused, and the output is consequently a result of the earlier two sections.

With regard to input, the case study school proves itself to be self-reliant and self-efficient and shows the attribute of interdependence among stakeholders in the community. The self-reliance and self-efficiency of the population are also significant to the case study. Firstly, most of the respondents answered that the self-reliance and self-efficiency of the population are good things and that they can lead to sustainability. This is in keeping with Lerner's (1968) suggestion that a self-supporting economy can lead to sustainability. Secondly, despite facing some difficulties and obstacles, the school and its population and the community are self-reliant in supporting themselves and are self-efficient in finding solutions to solve problems in a more sustainable way. This corresponds to Parrado et al.'s (2013) argument that self-efficacy is a significantly stronger determinant of performance outcomes than one's task-related skills. Parrado and colleagues believe that self-efficacy of citizens might be an important factor in co-production.

Another indicator that is found in the input of the case study is interdependence. The result is somewhat different from that of case study I. Considerable evidence underlines the significance of interdependence; for instance, one respondent stated that the simple goal for a sustainable future here is for the school to continue to operate in harmony with the community and the temple. It once

faced closure; however, thanks to the people's power and the community's unity and interdependence, it was able to resume its status (TY3FC, 17th May, 2016).

The school and the community worked together to prevent the school's closure. The case thus proves to be self-supporting and interdependent among many parties in the location. They do not wait for others to come and help them, but try to help themselves through collaboration. The school manages to provide an education that is suitable for its students and their environment with the least expectation of help from the government. When the subsidy is not enough, co-production from other sectors is required. For these reasons, interdependence among the stakeholders in education provision is necessary to this case study. Moreover, according to Pace (2010), the grassroots or community level should be the main target to encourage ESD implementation, as it is the closest one could get to reality.

Green (2003) presents the pedagogical concerns of ESD, which should focus on the use of participatory and problem-based teaching methods that are meaningful and relevant to children's lives. Moreover, it includes consistent engagement with the communities in which children live. Finally, the contextual circumstances and needs of the current setting should be taken into account. In the same way as Green (2013), for the process of implementation and co-production of ESD, cultural adaptation and community engagement were the most frequently mentioned indicators in the interviews with stakeholders from this school, followed by technology and media usage. This confirms that these indicators underpin the process of implementation and co-production of ESD. The case study shows that these three attributes are essential to ESD practice and can bring about the desired results, as shown in the output. The findings reveal that the participating teachers show a willingness to reflect on the principles of sustainable development, the value of a participatory and problem-based curriculum, a commitment to developmentally appropriate practice, and appreciation for the benefits of community engagement. Several keywords arose regarding ESD and ECE. The most dominant themes were about interdependence, community involvement, cultivating ESD knowledge and family involvement (Green, 2012).

Samuels et al. (2009) stated that cultural adaptation is the process of reviewing and changing the structure of a practice to be more appropriate or suitable

for the needs and preferences of a particular cultural group or community. In adopting ESD policy, the wishes of the community need be integrated into the plan. Moreover, co-production cannot ignore the local context of the service user. Co-producers from outside the community who voluntarily participate in the provision of education cannot bring their context without adjusting the program for the local users. The school's extra-curricular lessons serve the local needs of the students and their families. The school effectively integrates the top-down policy, *Moderate Class More Knowledge*, with the bottom-up plans. The classes help to build students' careers; moreover, the school tries to conserve tradition and nature. Furthermore, the co-production of families and community members who are the master of these topics can conserve the local tradition.

The results emphasize the relationship between the community and the school and explain why communities have to engage in education provision. According to Galli et al. (2014), co-production has two levels: the first level is from the students themselves and the second is from parents, student peers, the community, private and public organizations and media, which affect the quality and quantity of education services. At the second level, if these inputs are skilfully and regularly contributed, they enhance the quality of educational services. The case proves that they complete both levels of co-production. In addition, the case study is outstanding in the way that families and the community co-produce education. The community engages willingly in school activities to maintain the service provision and to enhance their children's future.

The last indicator in the process of the implementation and co-production of ESD is technology and media usage. According to many theorists, citizens' co-production always increases when the co-producers have certain tools or facilities (Watanabe 2013; Tsai 2013; and Jakobsen 2012). Technology and media is a contingent input to co-production education of the service and is favourable to co-producing ESD. It can improve the quantity and quality of the education. In the case study, technology and media usage is considered significant at the process stage of the implementation and co-production of ESD. It uses social media such as Facebook as channels to promote its activities and attract interest and co-production from external units that are beyond the immediate community. Nnabuo et al. (2014) view basic

education as a tool to increase SD by improving citizens' basic literacy and numeracy. Moreover, they consider that technology and media could help to promote SD, as citizens' co-production often increases if they have certain tools or facilities (Jakobsen, 2012).

Finally, the output of the case study is in the form of mutual benefits, primarily in intrinsic forms, in the short and long term. In the short term, immediate benefits include happiness and pride. People feel happy when they can give back to their community. In the long term, they hope that their children will gain life skills and better education. These benefits motivate people to co-produce the education with the school.

In the same way as in case study I, the most significant indicators are in the process of implementing and co-producing ESD in the cycle. The result proves that the processes are strong enough to bring ESD practices into the mutual benefits that arise as the output. Cultural adaptation, community engagement and technology and media usage are the most frequently highlighted success factors for ESD implementation and co-production in this case study. The researcher notes that when facing pressures and difficulties, people tend to co-produce more if they have the same goals. In this case study, the community hopes for a better future and a more self-supporting society for their children. This concurs with the statement saying that the better performance in service provision from local or state governments is, the less willing to coproduce the services happen (Parrado et al., 2013).

If full co-production means professional and users/communities as co-planners and co-deliverers (Boviard, 2006, cited in Boyle and Harris, 2009), the case study may not prove itself to have the full co-production of ESD. The case may apply to user co-delivery of professionally designed services (Table 1). In this case, the co-producers are willing to be involved in the provision of education and to co-deliver the service. The quality of the co-producers themselves can be the input to make the implementation and co-production of ESD successful. Moreover, the people know what benefits they will receive when they achieve their goal. The mutual benefits in both extrinsic and intrinsic forms encourage people to collaborate in the education of the next generation. Finally, the result agrees with the theory that citizens may need some specific production skills or knowledge to provide positive coproduction.

Moreover, citizens' co-production often increases if they have certain tools or facilities, and also depends on the time they have available (Jakobsen, 2012).



CHAPTER VI
RESULTS AND DISCUSSION
CASE STUDY III: BANTUNGRAKCHAIPAT SCHOOL

As in the previous chapters, this chapter will discuss the third case study: Bantungrakchaipat School in the Phang Nga province of Thailand. The chapter is divided into three parts, which will discuss the background and history of the school, present the research results and then discuss these results. The first part of the research consists of the background of the school, including its history, management and ESD practice. The school was chosen to be a case study because it has most of the ESD attributes that the researcher is looking for. Additionally, the case is outstanding in the co-production from relevant and non-relevant stakeholders in its education provision. The second part of this chapter provides in-depth information from the interviews, aiming to crosscheck with the twelve contributing factors which show the linkage among SD, ESD and co-production. The data are presented in the form of texts, graphs and tables derived using NVIVO 11 software.

The third part of the chapter discusses the significance of the indicators. The researcher adapts Easton's system theory as a framework to analyze the data. The indicators are put into graphical form, namely input, process and output. Then, the data are structured and processed in terms of their significance to the case study. When studied against the background in the earlier section and the literature review in Chapter II, a model of the implementation and co-production of ESD in the case study emerges. Therefore, it is necessary to start the chapter by providing detailed background information on Bantungrakchaipat School and its importance as a case study in the implementation and co-production of ESD.

6.1 Research results for case study III: Bantungrakchaipat School, Phang Nga, Thailand

Bantungrakchaipat School is located in the sub-district of Mae Nang Khao, which is situated in the district of Khura Buri within Phang Nga, Thailand. This area was affected by the Tsunami in 2004. The tsunami hit the south-western coast of Thailand, along the Andaman Sea. It caused death and destruction over a huge area, from the northern border with Burma to the southern border with Malaysia. Phang Nga, Phuket and Krabi were the worst affected areas in terms of loss of life and property (<http://gothailand.about.com/od/planatrip/a/tsunami.htm>). Many people lost their families and their jobs. Numerous children became orphans. Since the tsunami, aid from inside and outside Thailand has helped to repair the damage in this area.

In 2004, the Tsunami Relief and Recovery Activities of the Chaipattana-Thai Red Cross project helped victims with occupational restoration. Her Royal Highness Princess Maha Chakri Sirindhorn commissioned the Chaipattana Foundation to react immediately to the disaster by building a village providing housing, together with basic infrastructure and a solid waste disposal and waste water system. At the same time, the Chaipattana Foundation arranged activities for public health services as well as education, developing the Ban Tung Rak School, which is located close to the Chaipattana-Thai Red Cross Village, by improving its facilities and infrastructure and preparing the teachers. The school was reopened by Her Royal Highness Princess Maha Chakri Sirindhorn and given a new name, “Bantungrakchaipat School”. (<http://www.chaipat.or.th/>)

From the main Phetchakasem road, the journey to the school is approximately 7 kilometres uphill. The area is full of oil palm plantations and rubber plantations due to its geographical advantages. In the south of Thailand, it rains regularly. Therefore, water is plentiful, which makes the area suitable for this kind of agriculture. The school covers approximately 14 Rai (5.5 acres). It has one three-storey building and single-storey classroom buildings. It is a middle-size school with 150 students, 8 permanent teachers and 3 temporary teachers. The case study school is rather different from the other two cases in terms of the school personnel because the budget for hiring the temporary teachers is set apart and supported by the Chaipattana Foundation. The school does not face the shortage of teachers and the

number of teacher well match with the number of the students. Even though, the scarcity in teachers for special subjects such as foreign languages and music, seems to be the common problems among the three cases.

The sub-district of Mae Nang Khao has approximately four thousands of population. In the neighbourhood, the people settle along the local road and the houses are quite far apart. The school, the temples and the mosques are at the heart of the community due to the diversity of religion in the area. Transportation in the area is fair: there are local roads to the villages but there is no public transport to the remote areas from the main roads. The people are Muslim and Buddhist, so there is a variety of traditions, cultures, and professions in this area.

The Chaipattana Foundation itself was established with the special purpose of development. Owing to regulatory requirements and budget constraints encountered by government agencies, His Majesty the King Rama IX conceived a foundation that would serve to provide prompt, timely and necessary reactions to problems affecting Thai citizens through various development projects (Ibid). Bantungrakchaipat School is one example of the aid provided to respond to the old problems. Nowadays, the school services two areas: Moo 6 Ban Tung Rak and Moo 7 Ban Bang Dad.

The case study demonstrates the co-production and implementation of ESD at different levels. The school has mission to encourage students to have good morality and to conserve indigenous knowledge by using the philosophy of the Sufficiency Economy. They arranged nine learning bases for the students to learn outside the classroom. Moreover, the school has attempted to build relationships with community, local governments and other entities to participate in the education plan and management of the school.

Co-production from the Bantungrakchaipat School's neighbourhood comes from a group of people in the community who are the representatives of families, parents, local authorities, and local citizens. Moreover, private corporates and non-profit organizations are also involved in the co-production of education. This co-production can involve individuals or more collective groups and can be categorized by sector. Furthermore, the effects of co-production are examined through three dimensions: citizens' ability to co-produce in terms of having specific knowledge

relevant for their input, their level of co-production, and their use of the supplied co-production materials (Jakobsen, 2012).

First of all, family co-production in Bantungrakchaipat School is found to be important to the case study. Most of the students' families co-produce ESD by co-delivering the professional service plan. The school provides both routine and occasional academic activities. In the case study, the families participate in co-production through activities such as caretaking, cleaning and completing school activities when requested. Community co-production also shifts from individuals to more collective groups. The researcher observed groups of people in the community, such as the elderly and housewives. 'Community' here means people who live in the school's surrounding area and includes monks and temples, as well as mosques. At Bantungrakchaipat School, the community is involved in planning certain services with the school in the form of representatives, as in the other case studies. The community has to comply and collaborate with the school activities because it is the community itself that is directly involved with and benefits from these projects. Co-production from the other government agencies was present, albeit not outstanding, in the form of a LAO representative on the school's administrative board. Some other governmental agencies also co-produce education for the students at the school's request. Citizen participation is necessary in this point and the case study clearly shows community collaboration, albeit to a slightly lesser degree than non-profit organizations and the private sector.

The major co-production from non-profit organizations comes from the Chaipattana Foundation. Additionally, there are other institutions and foundations that support the school. Most of them co-produce education by supplying money, facilities and buildings to the school. For example, the Chaipattana Foundation, together with other organizations such as the Thai Red Cross, Chinese Red Cross, the Siam Commercial Bank, and American International Assurance Co., Ltd., contributed a large amount of money to renovate the old building and build new premises, including classroom buildings, a library and a playground. The supplied co-production materials are fully available at the Bantungrakchaipat School. For these reasons, the research aims to study the co-producers and the level of co-production that happens in the case study to implement ESD. The school was tested in terms of the twelve indicators using

in-depth interviews with eight stakeholders who co-produce and implement its education.

6.2 Result of case study III: The significance of each indicator

The result showed that the twelve indicators are highly relevant to the practices and academic activities of the school. The collaborative approach and partnership, community engagement, cultural adaptation, democratic participation, equitability, interdependence, interdisciplinary approaches, goal of sustainable future, leadership and contingency approach, mutual benefits, self-reliance and self-efficiency and. technology and media usage are all present in the case study at slightly different levels. The data analysis using NVIVO 11 software presents interesting frequencies of these indicators, as shown in the following subsections.

6.2.1 Collaborative Approach and Partnership

The collaborative approach and partnership shows that services provision should be delivered in a participative and equitable way. The case study presents aspect of this attribute, but its level of implementation in the school is not high. The collaborative approach and partnership is the aspect of the implementation and co-production of ESD that is least evident as an important factor mentioned in the interviews. Only two of the eight respondents mentioned it as a factor of the implementation and co-production of ESD, and they both referred to these terms only once. The graph below (Figure 6.1) displays the frequency with which this indicator was mentioned:

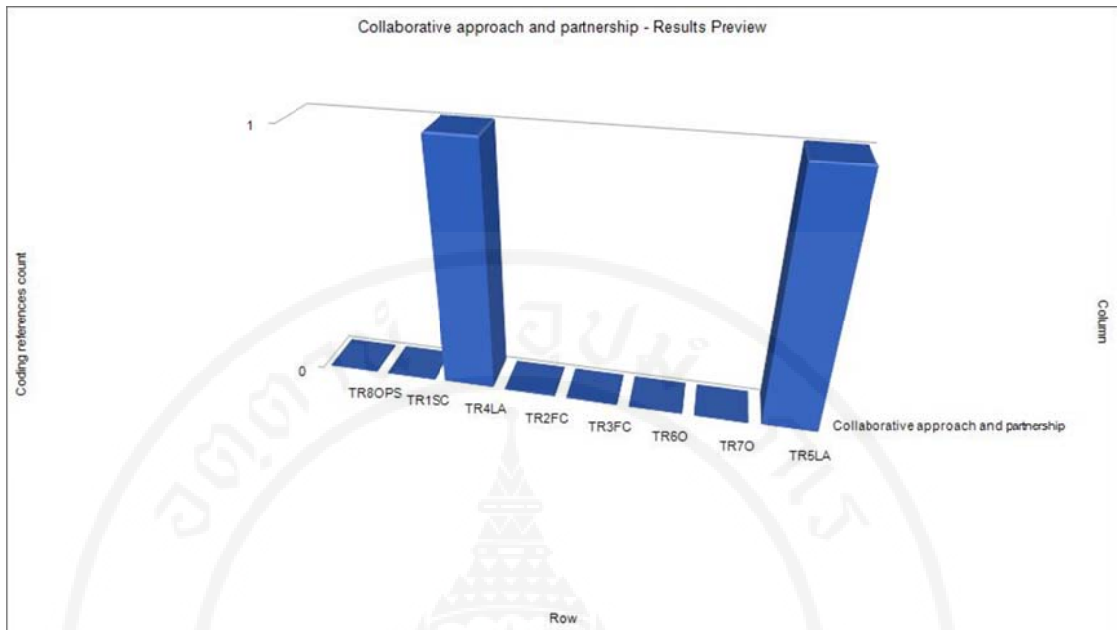


Figure 6.1: Frequency of Collaborative Approach and Partnership in case study III

In the words of one stakeholder, “I think it’s a mental partnership, not a physical one, because the school is not a company which can give a profit share to the stakeholder” (TR4LA, 31st May, 2016). The collaborative approach and partnership do exist in some forms. The school has been attempting to promote the fact that it belongs to the people and the community. When people feel that they possess something, they will take better care of it. The school actually wants the community to partner with them, to participate in its activities and to co-produce the education. In the real situation, families and the community collaborate with the school when requested. When the school requires anything from them, they do not hesitate to help if they are able.

We share common responsibilities to our community. It is not only teachers’ business. The teachers cannot complete the tasks on their own. People in the community, everybody – even monks from the temple – have to participate, like a network. (TR5LA, 31st May, 2016)

People feel that they should help the school out, as they are members of it and the school is part of their community. However, they often do not know what they

have to do for the school. It is the school itself that has to facilitate the co-production of activities from the community, and which has the best knowledge of the school's internal factors and problems. For example, the school lacks knowledge about plantation and faces problems in doing it. It thus asked for help from an external governmental agency, namely the Phang Nga Provincial Agricultural Extension office, thus creating a kind of partnership between the school and an external agency. In order to solve local problems and respond to local needs, it may have to reconsider other factors to support or improve the situation.

6.2.2 Community engagement

Community engagement is important to solve local problems and voice the community's needs to the service providers. The situation of community engagement in the case study was positive. It can help to mobilize resources, influence systems and change relationships among partners. The interview results revealed the high relevance of this aspect to the school's practices. Four of the eight respondents mentioned community engagement aspects as an attribute of the implementation and co-production of ESD and made interesting comments on it. The graph below shows that the aspect was strongly highlighted:

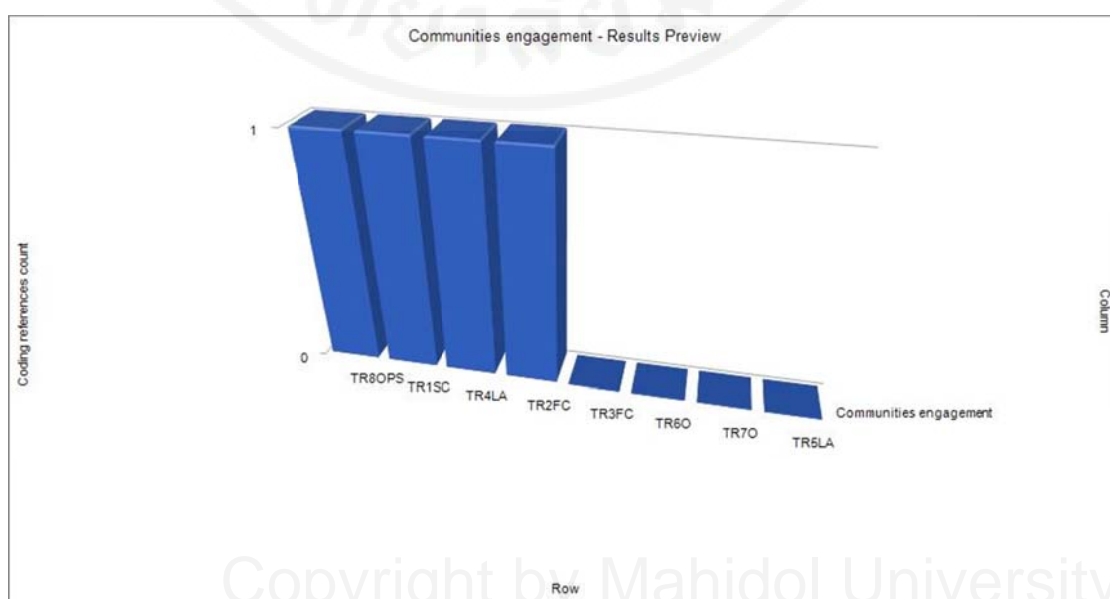


Figure 6.2 Frequency of community engagement in case study III

The people here are quite poor. The school doesn't ask much from them. In terms of labour, they can help. For example, we do not hire a janitor. At least once a month, the parents and people in the community come to the school to do the cleaning (TR1SC, 31st May, 2016).

The researcher saw some community engagement in the educational provision of the school, but not very much. Parents and the community participate in the school's activities if requested. The school asks for some collaboration from people and they are always willing to help. In the researcher's opinion, this is due to their sense of ownership of the school, as discussed in the previous section. They feel that they are partners with the school. That is why they are always available when the school needs something.

Another respondent said, "In the school development activities, the parents regularly attend events and help if they can. The parent engagement here is very good" (TR4LA, 31st May, 2016). In terms of the co-production of the classrooms, people with local wisdom occasionally come and give lessons. This may be because the school is not short of staff: it has sufficient teachers for the approximately 150 current students. Even so, its subsidy from the government is inadequate. They receive additional financial aid from the Chaipattana Foundation to hire extra teachers, and also benefit from a volunteer program from a private corporation that sends foreign volunteer teachers to the school to teach foreign languages and music. This helps it to complete its activities. Together with the academic provision from the school, the students here receive a wide range of classes that are useful to develop their academic and life skills.

6.2.3 Cultural adaptation

Cultural adaptation shows its importance in both co-production and the ESD context because ESD is locally relevant. It is necessary to interpret the term 'sustainability' in local settings for the purpose of reviewing and changing the structure of a program or practice so that it can more appropriately fit the needs and preferences of a particular cultural group or community (Samuels et al., 2009). The cultural adaptation in the case study appears to be one of the most significant

indicators. All eight respondents mentioned it during their interviews, and three of them referred to this aspect twice. The graph below displays the frequency of mentions of this indicator:

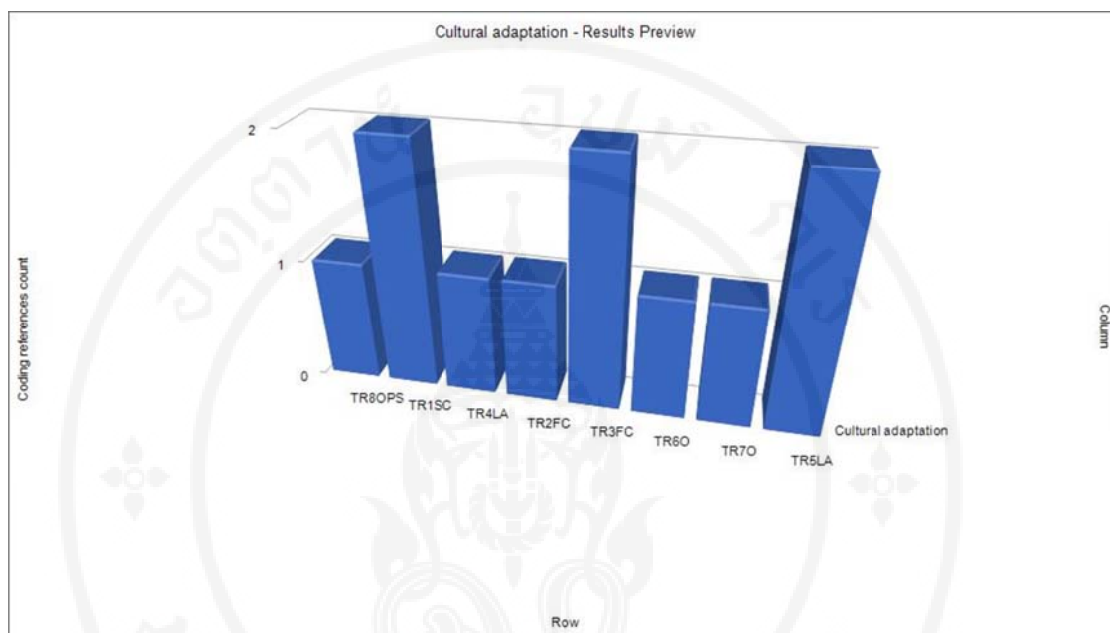


Figure 6.3 Frequency of cultural adaptation in Case study III

In the words of one respondent, “[cultural adaptation] is necessary. In each area, there are differences in culture and religion” (TR2FC, 31st May, 2016). The background of the school and its neighbourhood is culturally diverse. The occupations of people in the area vary due to its geographical advantages: there are forests, sea, coastal areas, plains for agriculture, a lot of rainfall, salt and fresh water, etc. Moreover, in terms of religion, the population is a combination of Buddhists and Muslims. The community is composed of various cultural attributes that must be considered by the government when arranging public services, including education.

I agree with this. We have been doing agriculture for many years – since our grandparents’ time. In our community, agriculture has become our tradition. The school teaches the basis for agriculture in the form of nine learning bases. Even though, the result is not obvious in the short term, we continue. When they finish school and find jobs, they will acknowledge the result.

Even if they are not good at academic subjects, they can survive. (TR1SC, 31st May, 2016)

Phang Nga province, including the Khura Buri district, has a variety of geographical sites that provide a range of occupations. Agriculture has become a way of life for many people in the community. The school adopts these cultural aspects in order to develop its students' life and occupational skills.

Everyone in the community, including the elderly, collaborates in activities to develop the community. Actually, the local wisdom is held by the seniors in the community. Co-production from them is very useful to the students. For example, knowledge about making the tools for local fishery, like fishnets and trawls, is about to disappear. The co-production of the elderly in the school helps in conserving it. (TR5LA, 31st May, 2016)

Most of the respondents mentioned that this indicator was very important in helping the students to shape their future careers. Furthermore, religion is another aspect that the school has to consider when arranging its curriculum and classrooms. One respondent explained: "We have to arrange schedules that suit to the tradition and religion. For example, on Friday, they bring the Muslim students to the mosque to pray" (TR6O, 31st May, 2016). The students' schedule is quite flexible and enables them to commit their religious ceremonies. This helps in teaching students from different backgrounds to be able to live together respectfully. The students acknowledge the diversity and are able to adapt themselves to the differences in the society.

6.2.4 Democratic participation

Citizen participation is a basic practice in democracy. In the co-production literature, the percentage of the population co-producing public services depends on different government regimes. Past research shows that there is more participation in democratic governments than in social welfare regimes (Pestoff & Brandsen, 2009). It

is necessary to encourage the principle of cooperation between stakeholders and the sustainability discourse emphasizes democracy and involvement in decisions that affect them. Seven of the eight respondents from this case study mentioned the democratic participation factor, with one acknowledging it twice. This indicator seems to be significant. The graph below shows the frequency of mentions of this theme:

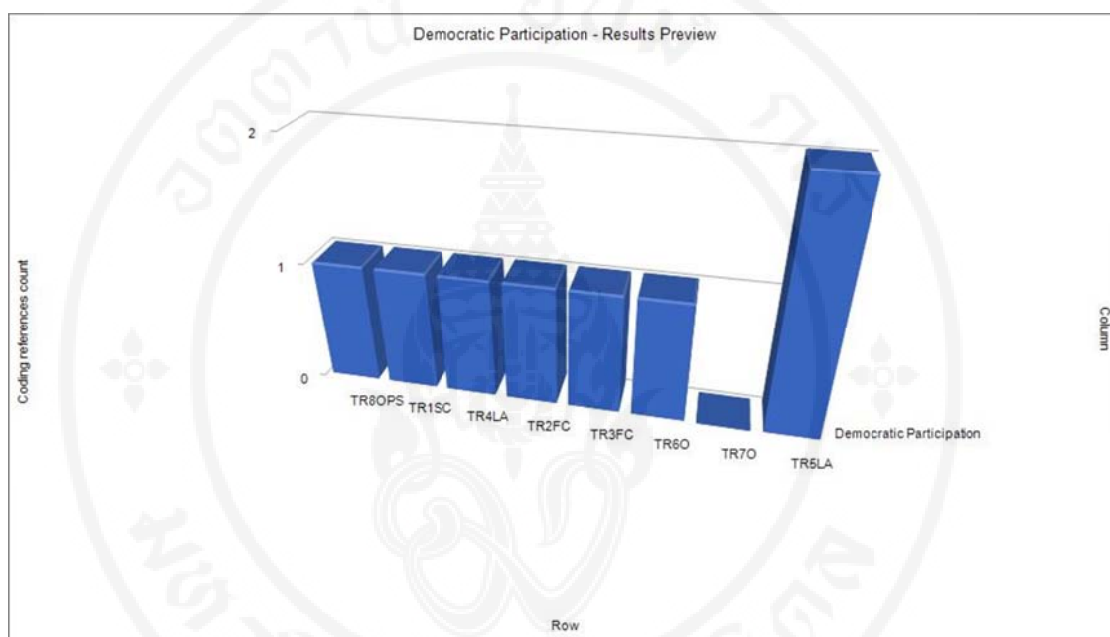


Figure 6.4 Frequency of democratic participation in case study III

As one respondent emphasized, “It is very important that everybody knows their rights and their duties. When we are writing any plans, we want to know what they really want. We want to listen to their voices” (TR5LA, 31st May, 2016). Democratic participation is also required in the implementation and co-production of education in every case study, including Bantungrakchaipat School. The fact that everybody should know their rights and their duties as the rules of democracy is emphasized. There are many stages of co-production of education, from planning to giving lectures. The school, or any other agency taking care of the plans and policies, will usually want to listen to opinions on the issues that they are discussing. However, in Thai culture, some people are too closed and considerate and are reluctant to express their own opinions.

The school headmaster always tells the parents to vote when needed, but they are so considerate that they do not give their voices. So, I am their representative if they want to talk with the school (TR2FC, 31st May, 2016).

Parents thus use representatives to be their voice. That is also a practice in democracy. The majority vote is another rule of democracy that the researcher observed in the case study. Nonetheless, some voices disagree with the majority vote on occasions and see that it is sometimes incorrect. “Sometimes, the majority vote is not correct. The point is that they should educate people who can vote. They should know something about the budget” (TR5LA, 31st May, 2016). People have the possibility to go with the crowd. In the researcher’s opinion, democratic practices should be taught, as they are not intuitive.

6.2.5 Equitability

In terms of public service provision, co-production means the delivering public services in an equal and reciprocal relationship between professionals, public service users, their families and their neighbours (Boyle & Harris, 2009). Moreover, equitability is characterized by the quality of equity or fairness. The research examined the case study in this aspect. The equitability indicator appeared to be significant in the implementation and co-production of ESD. Five of the eight people referred to it as a common attribute of the context. The graph below shows how many times people mentioned equitability:

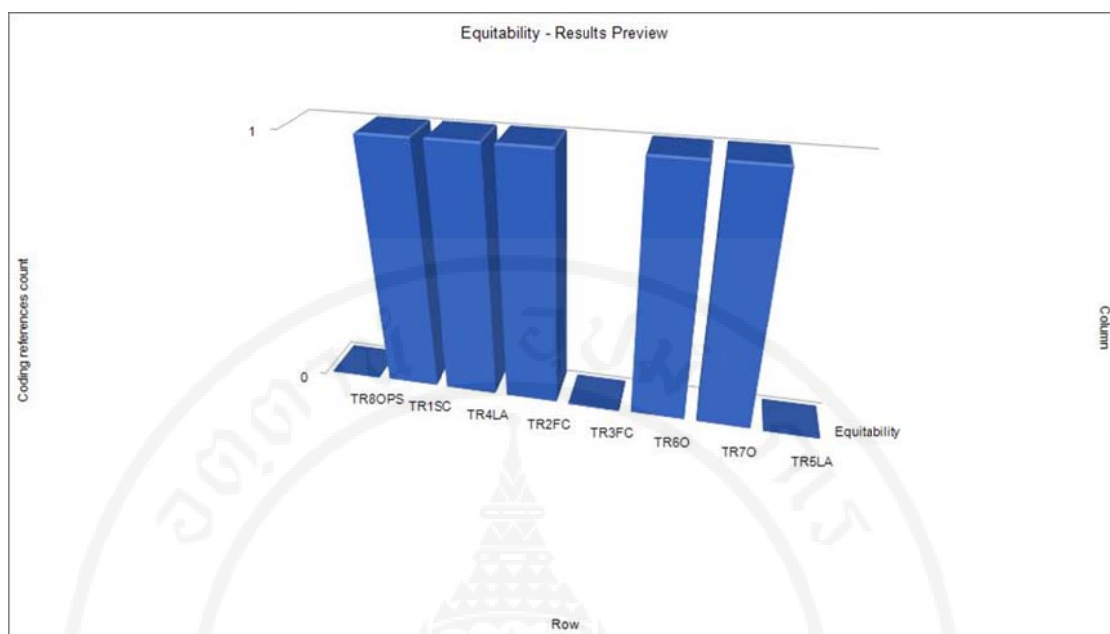


Figure 6.5 Frequency of equitability in case study III

In school, if we talk about equitability, I would prefer to define the word as “balance”. If we make it balanced, it will become fair. We give equal services to the students: we provide breakfast, lunch, and education to all, no matter what religion they are, or how perfect their bodies are. We accept even students with wheelchairs. (TR1SC, 31st May, 2016)

Equitability is defined in Chapter Two as fairness and equality in the distribution of resources and services. In the case study, one respondent gave an interesting interpretation of the term as “Balance”. The school gives equal services to all students who want to study there. There are limited resources and subsidies, but the school has to make them stretch. As one respondent put it, “It is very important. It’s equal: they distribute things so that everyone has some, but not much”. However, considering the bigger picture in the community, another respondent’s opinion shows another aspect of equitability.

In my opinion, it’s not equal. For example, the internet network is available only in the main roads, not everywhere. So, we have to manage our lives on our own. (TR4LA, 31st May, 2016)

Some commented that the government service provisions still seemed unequal, possibly due to financial constraints. However, the best way to overcome any such obstacle is to be self-supporting and self-reliant. This point highlights a very interesting link between equitability and self-reliance and self-efficiency: that is, the less equitable the service provision is, the more self-reliant the people should be. We can see an example of this in school and the people in this case study.

6.2.6 Goal of a sustainable future

Achieving a sustainable future is all about managing resources so that there will be enough for future generations. The goal of a sustainable future is subject to local interpretation, as is the term “sustainability”, and varies in each case study. Therefore, it is important to study this aspect case by case. The goal of a sustainable future as an aspect of the implementation and co-production of ESD is supposed to exist in the case study. Nonetheless, only half of the overall respondents mentioned this factor during their interviews. The graph below displays the frequency of appearance of this indicator:

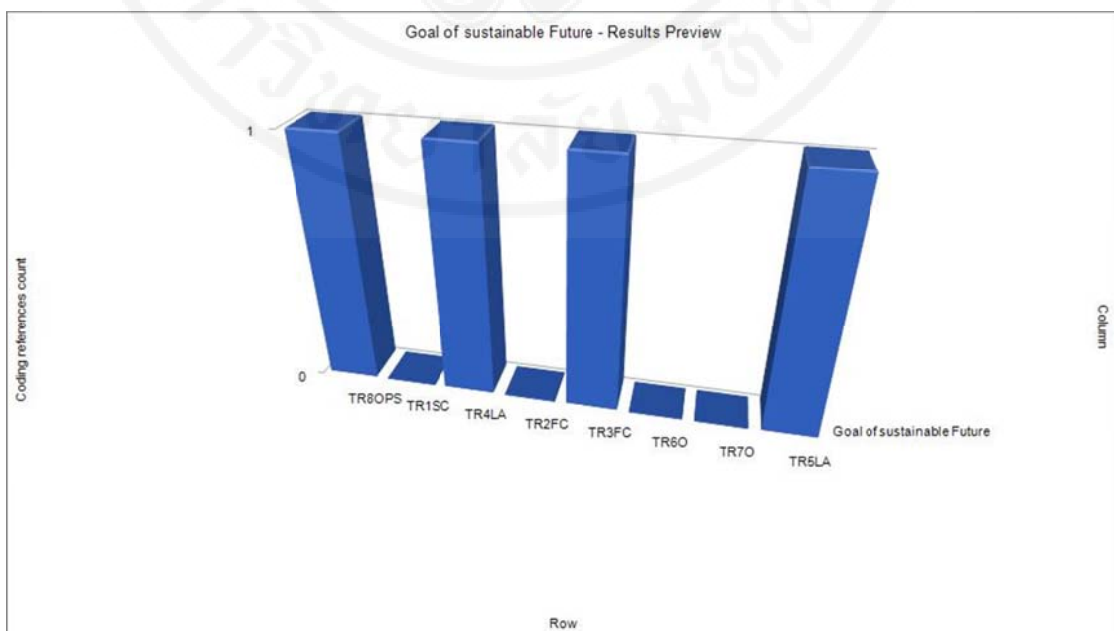


Figure 6.6 Frequency of goal of sustainable future in case study III

As one respondent said, “The school has such goals and does things to accomplish them. However, the meaning of the term ‘sustainability’ is not clear. I think it’s too academic, but in practice, they always do that” (TR4LA, 31st May, 2016). The meaning of sustainability is still a problem and continues to be contested. The interpretation depends on the individual. The respondent above gave the opinion that the term is too academic. Maybe it is too broad as well. Nonetheless, the school has its missions and visions to accomplish. These lead to the school practices. Some interpret sustainability as being completely self-supporting and able to solve one’s own problems.

Sustainability means being completely self-supporting, with no need for help. People can solve their own problems by themselves. People now depend on the nation’s economy, but it’s up and down. It’s not sustainable. If we can do things like Rama IX teaches us, the capitalists will have to be afraid of us. We can live happy lives, as the Sufficiency Economy mentioned. (TR5LA, 31st May, 2016)

The school has adopted the theory of Sufficiency Economy into their curricula in the hope that this practice will enable the students to be self-reliant and self-sufficient in their future. Moreover, co-production of education from the private sector can be seen in the case study. “We want to support the people to have foreign language skills. Therefore, they can find jobs and can support themselves,” mentioned one respondent (TR8PC, 31st May, 2016). It seems that the goals of this school’s education management are geared toward supporting the well-being of the people so that they can become self-supporting.

6.2.7 Interdependence

The main characteristics of interdependence show that interdependence primarily expresses the interconnectedness among actors, resources and/or tasks (Blau, 1964; Pfeffer and Salancik, 1978). Additionally, interdependence appears as both a cause and a consequence of collaboration and cooperation among agencies and organizations (Hillman, Whitters and Collins, 2009). The school needs to depend on

other institutions in order to maintain and improve its services. Interdependence proved to be a significant indicator in this case study. One respondent referred to it twice, while another four referred to it once. The graph below displays the frequency of use of this indicator in the interviews:

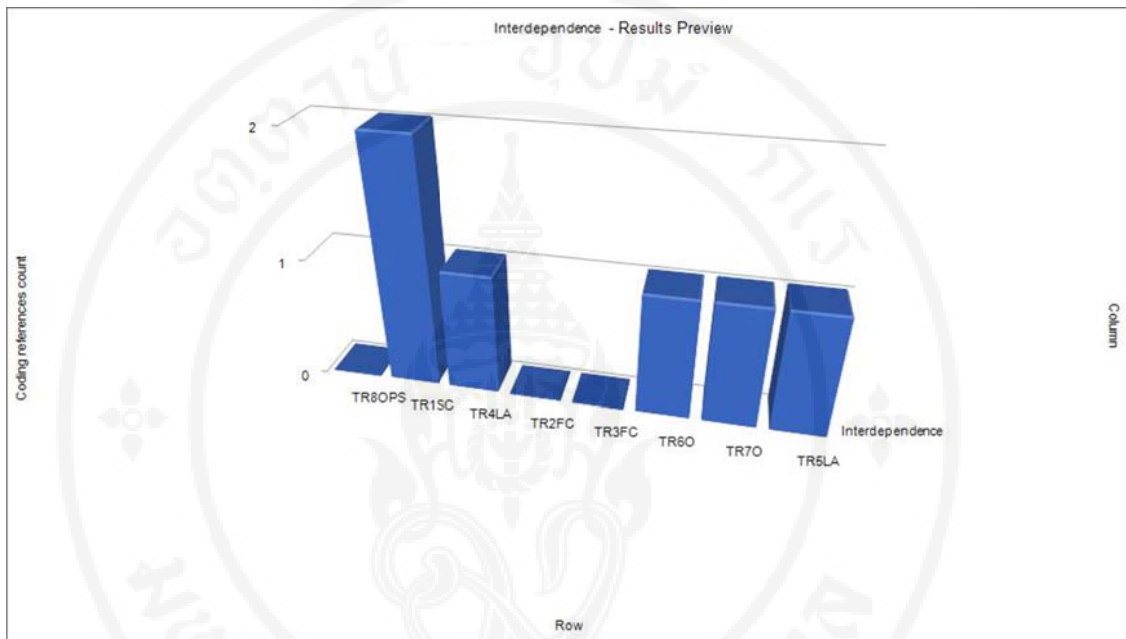


Figure 6.7 Frequency of Interdependence in the Case study III

I agree with this aspect. We cannot stand alone. When we lack something, we may need people to fill the gap. If we lack knowledge, we need other people to give us knowledge. If we are short of labour, we need people to help us out... we try to tell people that the school is theirs, not ours. They should come and help to move it forward. (TR1SC, 31st May, 2016)

Interdependence is highly relevant to the implementation and co-production of ESD in the case study. The school tries to tell everybody in the community that it is everyone's. In the community, people need interdependence among the Home, Temple/Mosque and School. "Temple, school and mosque need to be interdependent", stated one respondent (TR4LA, 31st May, 2016). This is because they each support one another. The school itself is not complete, as it still has many needs that others must fulfil.

I agree. Everything has to be interdependent. Temples are also important. Dhamma teaching helps to make good people. There is a very good temple in this neighbourhood. As well as being a place of worship, it conserves a forest where the students can learn about forest ecology. (TR4LA, 31st May, 2016)

Additional help from other governmental agencies or any other sectors cannot be guaranteed. The community where the school belongs has to be a key actor. The community may have needs that the school can fulfil. The characteristics of a society in which every sector in the community is united and interdependent represent an advantage to the implementation and co-production of ESD.

6.2.8 Interdisciplinary Approaches

Interdisciplinary and holistic learning for sustainable development must be embedded in the whole curriculum. The interdisciplinary approach is an integration of disciplinary insights (Haynes, 2002). Co-production of education provision applies this approach due to the fact that different co-producers have different capacities in conveying knowledge. The interdisciplinary approaches indicator is concerned with the implementation and co-production of ESD. Three respondents referred to it only once. The graph below shows how many times people mentioned interdisciplinary approaches:

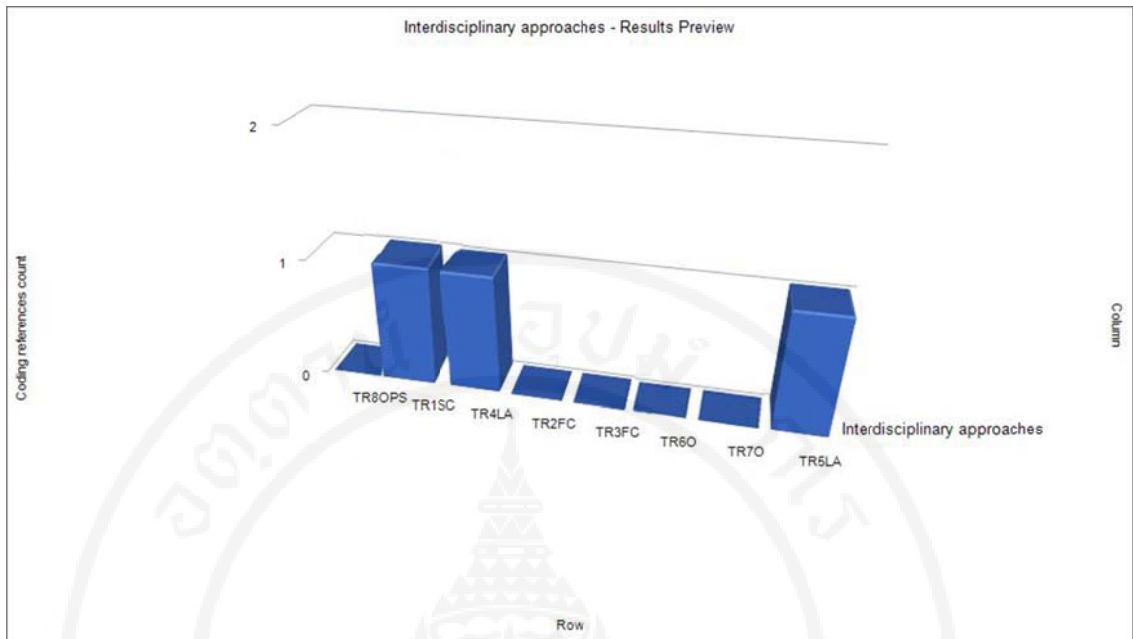


Figure 6.8 Frequency of interdisciplinary approaches in case study III

In each learning base, we integrate many subjects together. For example, in the cooperative learning base, the students can learn about democracy, rules of collaboration, rules of saving money, etc... We do not directly tell them what they have to learn in these activities but we let them absorb these learning aspects. (TR1SC, 31st May, 2016)

Interdisciplinary approaches are evident in this case study, as in the other two case studies. The goals of the extra classrooms are similar: that is, to embed good attitudes toward life and the environment and to create life skills. The pupils practice “Learning by doing” in these lessons. These lessons do not directly convey the purpose of the activities to the students; rather, they learn little by little by practicing appropriate and useful activities.

At Bantunrakchaipat School, the teachers and the students collaborate to do activities together as well as studying in the classroom. Even though there is not much land to do agriculture, the school tries to arrange some places for students to do planting. (TR5LA, 31st May, 2016)

One respondent emphasized the importance of the life skills that children should have. These skills are good for the children and the community in the long run. The children can earn their living and the economy of the community is better supported by the people in the community themselves. He went on to say that both academic and life subjects are important, by asserting “It needs to be both: theory and practice. The future is not secure. If the students are unemployed, they can use these skills to earn a living (TR4LA, 31st May, 2016). Because the results of the ESD practices may appear only in the long term, the school administrators and teachers have to continue and resist intervention.

6.2.9 Leadership and Contingency Approaches

Many theorists emphasise the importance of leadership to co-production public services and some suggest that the leaders of the communities are the ones who put forward the community-based policy (Shuttenberg & Guth 2015; Suwanich 2008). The best way to organize depends on the nature of the environment to which the organization relates (Scott, 1992). Seven respondents mentioned leadership and contingency approaches in their interviews. The indicator proves to be quite significant. The graph below shows the frequency of the theme:

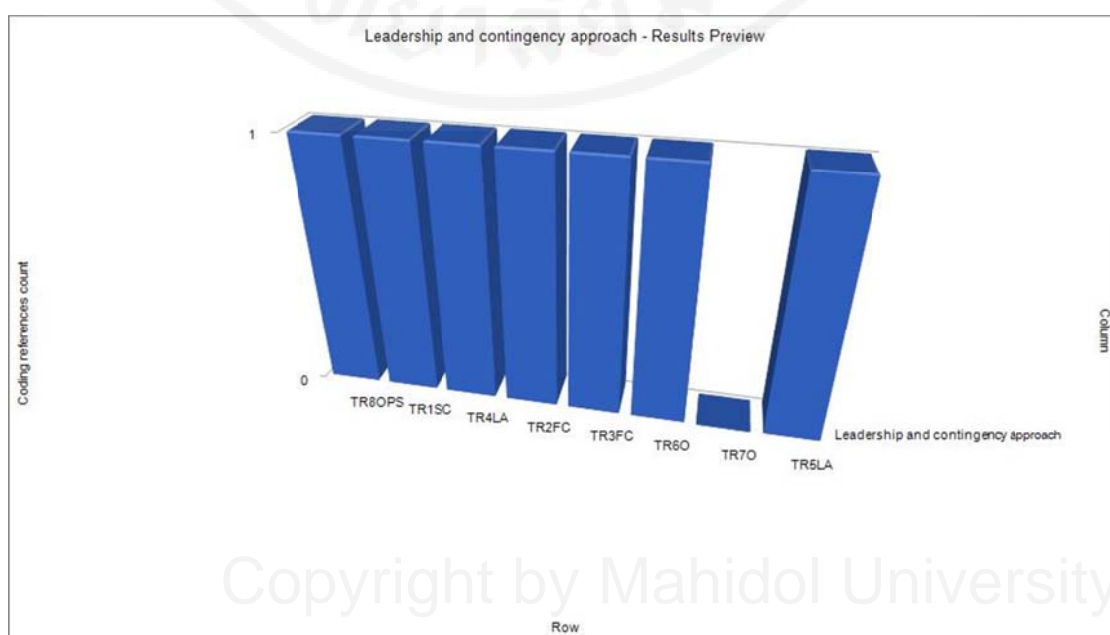


Figure 6.9 Frequency of the leadership and contingency approaches in Case study III

The leaders have to sacrifice themselves. Sacrifice in every aspect from the family aspect to work aspect. In my case, I sacrifice myself for the happiness of my family and my students. Everybody needs to get along in moving things forward. If not, it becomes difficult. (TR1SC, 31st May, 2016)

Most of the respondents mentioned the leadership and contingency approaches as one of aspect that is essential to the implementation and co-production of ESD. They gave various interpretation and characteristics of leadership. One referred to the sacrifice of the leader as an important attribute to push forward the jobs they are doing. If they themselves are leaders, the sacrifice has to be doubled. However, another mentioned that it is not necessary for people to be leaders in order to have leadership characteristics. Everyone can have them.

People can have leadership qualities even though they are not assigned any positions. People are efficient because they have good leaders. They listen to their leaders. Anyway, people can naturally become leaders and have leadership as a characteristic. If they sacrifice themselves, do their duties, they will gain faith and respect from others. This is leadership. (TR5LA, 31st May, 2016)

Faith and respect are two things that leaders should gain from their members or followers in order to make tasks easier to accomplish. The contingency approach can also be seen in the case study. In light of the insufficient governmental subsidy provided to the school, the contingency approach is essential to enable the management team to solve the problem. One quotation confirmed the fact that leadership is important to the case study: “It is essential. Many projects and aid come to our village. This is because they see the potential in the past projects. Leadership leads the project to us” (TR4LA, 31st May, 2016). One strategy that the school chooses to solve problems in a sustainable way is its use of self-sufficient agriculture for domestic consumption and for small commerce. They plant vegetable for breakfast and lunch and they also sell their products to raise money for the school’s cooperative.

6.2.10 Mutual Benefit

The benefits of the policy bounce back into the political system to increase political support and thus to “sustain” the program (Wongthanavas, 2003). There are two-way benefits between stakeholders. Users of many public services are themselves important co-producers (Whitaker, 1980). In education, teachers cannot produce education without the co-productive efforts of students, for example. Mutual benefit was a significant aspect of the implementation and co-production of ESD in this case study. Seven of the eight respondents mentioned mutual benefit as a factor enhancing the implementation and co-production of ESD. Four respondents referred to the terms twice in their interviews and the other three acknowledged it once. The graph below displays the frequency of this indicator:

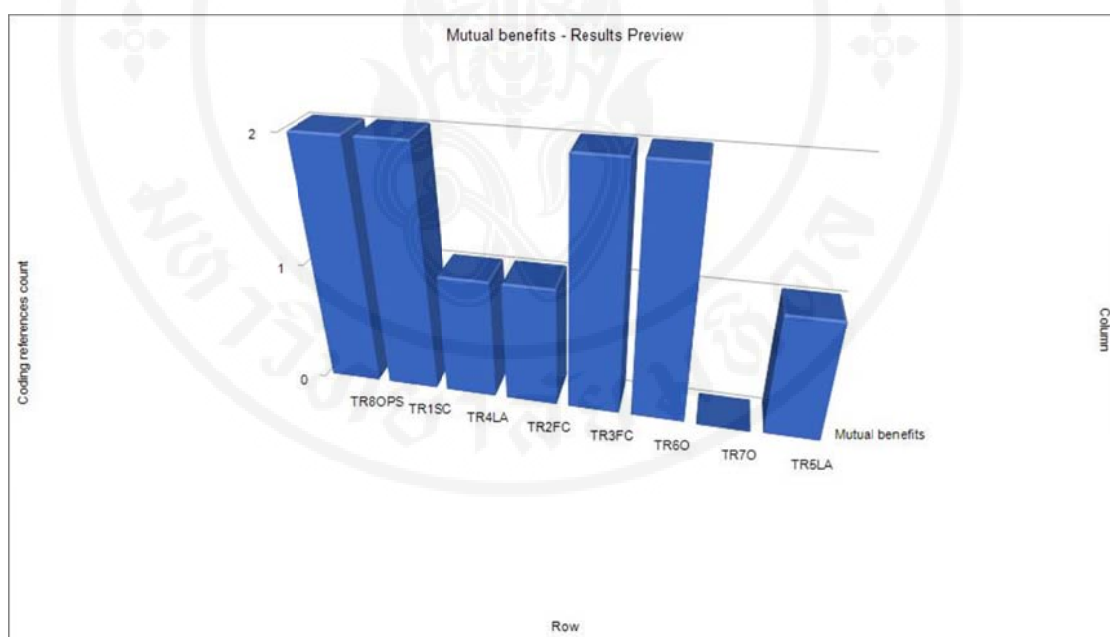


Figure 6.10 Frequency of mutual benefits in case study III

It's not a money matter. Everybody in the village needs their kids to have good well-being, good education. People who co-produce the classroom hope that every kid in the community will receive a good education. The students here are like our nieces or nephews. The rewards are intrinsic. (TR5LA, 31st May, 2016)

In the same way as in the other two cases, mutual benefit gained the highest frequency in the interviews. It can be assumed that without mutual benefits, the implementation and co-production of ESD might not happen. Mutual benefits occurred in two forms: intrinsic and extrinsic values. Intrinsically, people who co-produce education gain value in themselves and satisfaction in the quality of education that the children in the community receive, or in the society in which they live, for instance. They feel happy that they can do something good for their community and its children. Alternatively, many people receive extrinsic rewards when they co-produce the activities.

It's our product, let's say. ...people want to be volunteers, and we see that we can add a volunteer program as an AD product. We put a margin on it. The school benefits from us and we make profits. (TR8PC, 31st May, 2016)

In this case study, some social enterprises or private sectors receive profits from co-producing education. For example, the volunteer program arranged by a social enterprise make more or less margin for the company; at the same time, its students benefit from learning languages and staying in a multicultural setting. This kind of co-production has dual benefits, which are beyond what the government can provide to the schools. Thus, the co-production of education from other sectors is also essential to make it better and more sustainable.

6.2.11 Self-reliance and self-efficiency of population

Self-reliance and self-efficiency of the population is a good quality that is expected to appear in a society that needs the co-production of ESD. Self-efficacy of citizens is an important factor in co-production (Parrado, et al., 2013). All eight respondents mentioned self-reliance and self-efficiency of the population as an attribute of the implementation and co-production of ESD. One of them mentioned it twice. The graph below illustrated how this aspect was highlighted:

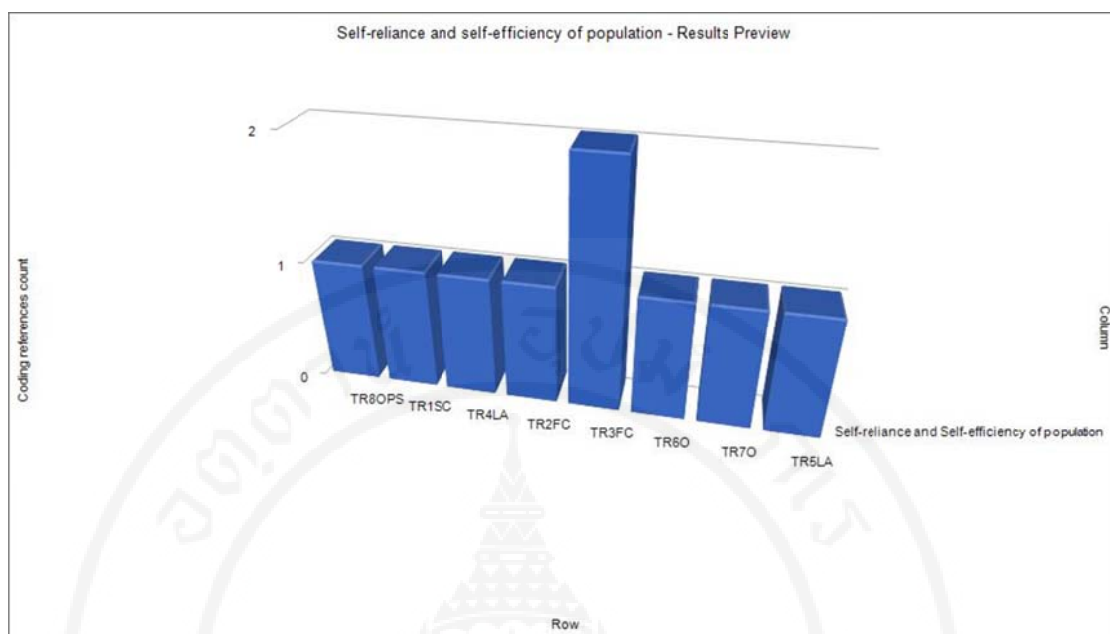


Figure 6.11 Frequency of self-reliance and self-efficiency of population in case study III

They live their sufficient lives. They do rubber plantation and palm plantation. Moreover they do agriculture, chicken farms, and fishery. These occupations don't make people wealthy but they keep them from starving. (TR4LA, 31st May, 2016)

The economy in this area is not good but it offers quite a lot of job opportunities, mostly involving agriculture. Since the tsunami in 2004, circumstances have changed. In the south-western area, including Khura Buri, Phang Nga, some people lost their families, friends and jobs. Considerable aid from Thai and international organizations was provided to help with their recovery, mentally and physically. "People are getting used to be helped", according to one respondent (TR5LA, 31st May, 2016). For these reasons, the self-reliance and self-efficiency of the population is an issue that the community and its leaders wish to highlight. The mindset of the people here needs to be reset.

One respondent mentioned that "People need to be self-reliant. We rely on state help but we need to rely on ourselves first" (TR7O, 31st May, 2016). The attitudes of the people should be geared toward this aspect. Therefore, education that

can embed these key characteristics should be considered and arranged for the young students, especially in this case.

In my opinion, people should rely on themselves. Some groups of people hope to rely on help from government help or politicians. This makes the people weak. In my opinion, Thai people are weak. I hope that education can teach the kids to be self-reliant. (TR5LA, 31st May, 2016)

In this case study, the self-reliance and self-efficiency of population indicators can be as considered both input and output of the policy process. This is quite different from the earlier two case studies, as discussed in the next section.

6.2.12 Technology and Media Usage

Citizens may need some specific production skills or knowledge to provide positive co-production (Alfors, 2002; Levine, 1984, cited in Jakobsen, 2012). Furthermore, citizens' co-production often increases if they have certain tools or facilities. The technology and media usage indicator relates to the implementation and co-production of ESD. All eight respondents referred to it as an important attribute. The graph below shows the frequency with which technology and media usage was mentioned:

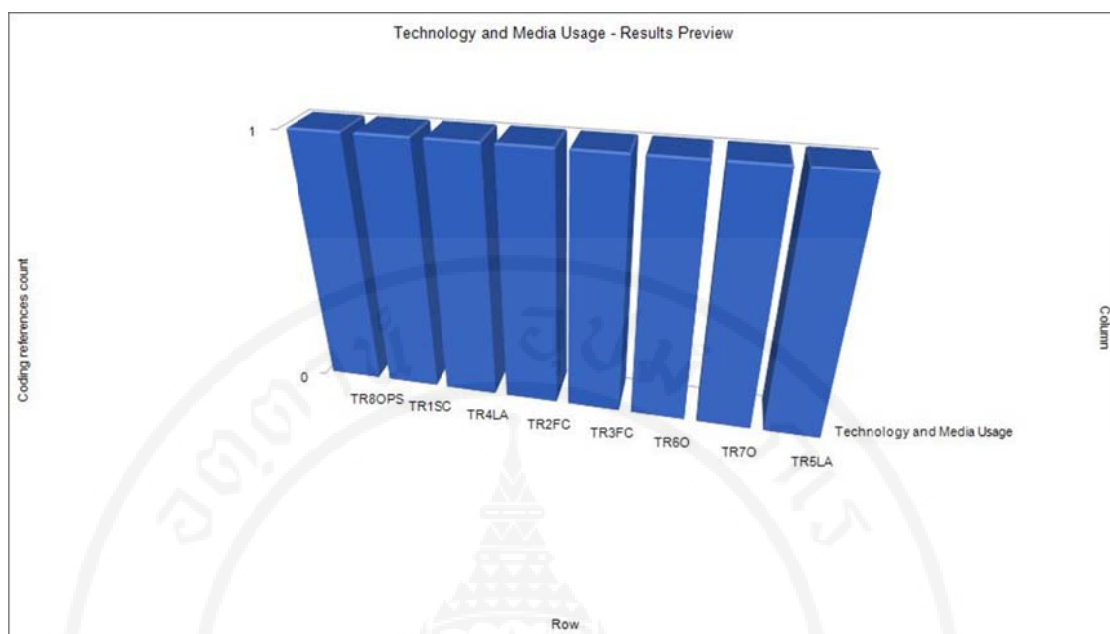


Figure 6.12 Frequency of technology and media usage in case study III

In the school, we have TOT high speed internet. The students use IT a lot. For example, we provide 3-4 classrooms equipped with large screen televisions for distance-learning via satellite. The students can make use of these programs. (TR1SC, 31st May, 2016)

Technology and media usage proves to be very important to education management, especially for schools in remote areas. Although the technology is expensive, it is worthwhile in the long run, as it helps to compensate what the school lacks. For example, if a school does not have an art teacher, this distance-learning program can do his/her job in giving a lecture. Moreover, knowledge on many subjects is available online. Furthermore, the online channel nowadays provides an alternative channel for buying or selling merchandise. If people learn how to use it, it can create more job opportunities and markets: “There are free seminars on online marketing and e-commerce for the parents. I think this channel will make our businesses more sustainable” (TR4LA, 31st May, 2016).

However, technology has both advantages and disadvantages, depending on who is using it and how. This kind of guidance on technology and media usage should be taught to children at school. The school also has to use the full capacity of

the technology available to it. Moreover, to invest in technology and media, good planning is needed. Sometime, the school itself cannot invest in technology and media usage alone. Collaboration or co-production in this service is essential.

Technology and media usage are favourable to co-producing ESD. When they have certain tools or facilities, citizens' co-production often increases (Watanabe 2013; Tsai 2013; Jakobsen 2012). The co-production and implementation of ESD can take place even without technology and media usage. Nevertheless, according to many studies, technology and media usage can enhance the quantity and quality of education. Technology and media is a contingent input to co-production of education services. In the case study, technology and media usage is highlighted as a significant process in the implementation and co-production of ESD. The stakeholders recognise its importance to maintain and improve the quality of the service. The school gains a lot of co-production supplies from other stakeholders who can afford to contribute large investments in technology such as internet access, computers, and satellite broadcasting to the school. Non-profit organizations and private sectors are the main co-producers of this type of co-production material.

6.3 The frequency of indicators as significant factors in the implementation and co-production of ESD

When the graphs of the frequency of the indicators mentioned during the interviews are put together, the new graph gives a meaningful picture of the significance of each indicator, as shown below:

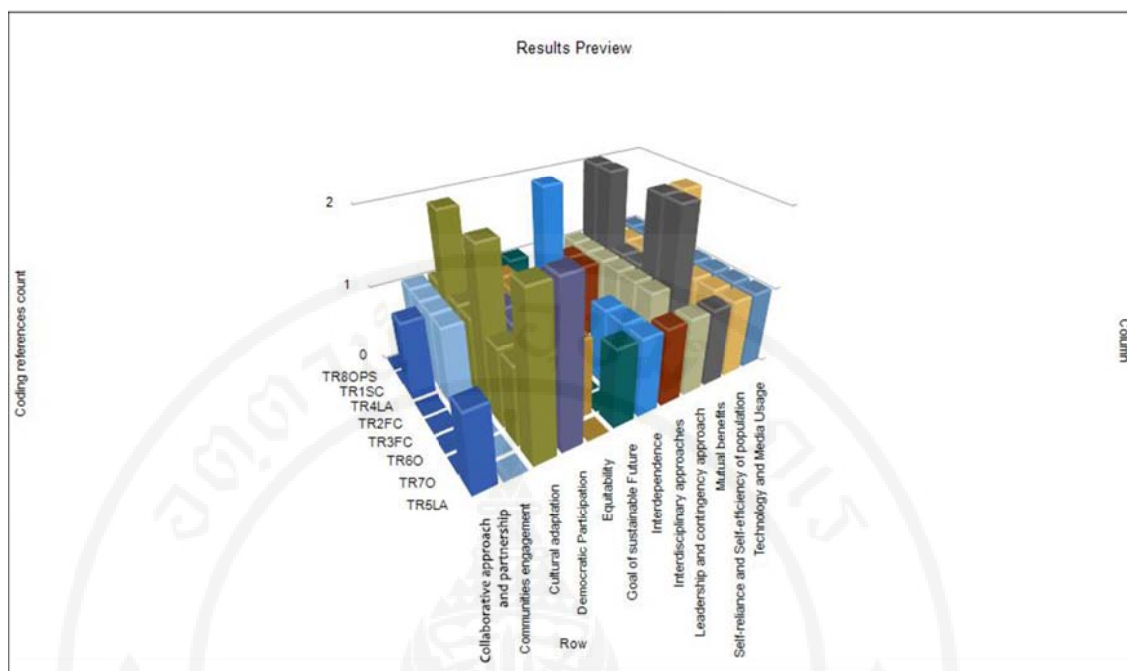


Figure 6.13 Frequency of indicators in case study III

Compared to the other two cases, the graph shows lower frequencies of the indicators mentioned during the interviews. However, it shows the key characteristics of the implementation and co-production of ESD in this case study. In the case study of Bantungrakchaipat School, Phang Nga, the significant key indicators appear to be self-reliance and self-efficiency of the population, interdependence, leadership and contingency approaches, cultural adaptation, democratic participation and mutual benefits. When these key indicators are put into graphical form, the following result is obtained:

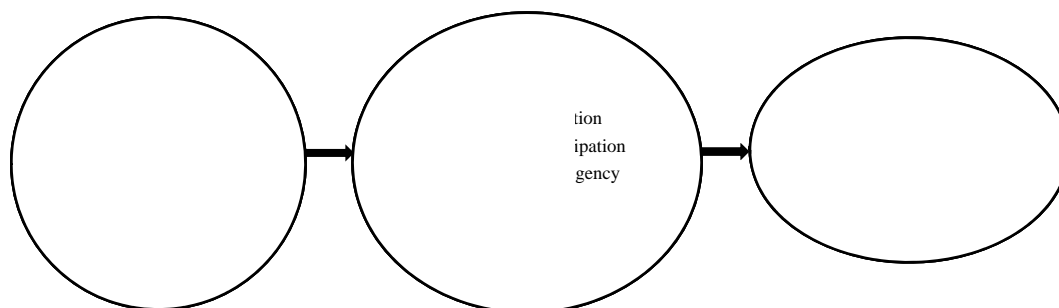


Figure 6.14 Cycle of implementing and co-producing ESD with the most significant factors in case study III (Author’s graph)

Figure 6.14 shows an almost balanced cycle of policy implementation: that is, input, process and output. Self-reliance and self-efficiency of the population, interdependence, leadership and contingency approaches are in the input stage of the cycle. Cultural adaptation, democratic participation and leadership and contingency approaches are in the process phase. Finally, mutual benefits and self-reliance and self-efficiency of the population are in the output phase. From the graph, two intriguing points require discussion: 1) why are self-reliance and self-efficiency can stay in both the input and the output of the cycle, and 2) what is the most important phase in the cycle in the case study among input, process and output; or are they all important?

In the input process, self-reliance and self-efficiency of the population, interdependence, leadership and contingency approaches are significant indicators, as the respondents highlighted these keys most frequently as attributes of the implementation and co-production of ESD. However, in the case study, some of them gained a negative tone. For example, one respondent argued that some groups of people in this setting rely too much on help from the government or politicians. He hopes that education can teach the younger generation to be self-reliant (TR5LA, 31st May, 2016). This implies that in reality, the community and the people are not sufficiently self-reliant and self-efficient. Many mentioned that the goals that they are accomplishing are to be self-supported and require less aid. They also interpret the term “sustainability” to mean that people are completely self-supporting with no need for help. People currently depend on the nation’s unstable economy, but this is not sustainable. One respondent mentioned that the Sufficiency Economy can be a means to address this issue (TR5LA, 31st May, 2016).

For this reason, the researcher has shifted the self-reliance and self-efficiency of the population into the output phase of the cycle as well. The other indicators of the input – that is, interdependence, leadership and contingency approaches – have been shown to be important in this case study. The people and the community, together with other institutions such as the school, the temple, and the mosques, are interdependent. They complement one another in many aspects. Other studies of SD, ESD and co-production show other dominant themes, namely

interdependence, community involvement, cultivating ESD knowledge and family involvement (Green, 2011).

Shuttenberg and Guth (2015) focus on the attributes that enhance ESD implementation and co-production. Firstly, ESD is from the existing individual and organizational capacities of science, traditional knowledge, management and governance. Secondly, the source of co-production capacities is from the broader social-ecological system (SES) in which knowledge co-production takes place. Moreover, the theory regarding prerequisites for a community-based environmental public policy development argues that characteristics of leaders are important. First of all, leaders must have a new paradigm. Secondly, leaders must have a public consciousness attitude. Thirdly, leaders must be willing to accept external assistance. Fourthly, leaders must develop local regulations, and finally, the rules and regulations of the community should not contravene state policy laws (Suwanich, 2008). As the results confirmed, the roles of leaders and leadership are the keys to continue and maintain good practices. The leaders have to suggest and facilitate ESD or SD practices to be operated in the community. The two indicators show good characteristics of the society that facilitate ESD.

The process of the implementation and co-production of ESD involves cultural adaptation, democratic participation and leadership and contingency approaches. However, democratic participation aspect gained negative comments from some respondents, who felt that the majority vote is not always valid. People who can vote need to be educated (TR5LA, 31st May, 2016). It is unclear whether democratic participation exists in this case study. If so, is it correct, and can it contribute to the implementation and co-production of ESD.

Meanwhile, other indicators such as cultural adaptation and leadership and contingency approaches are obvious: these indicators were also revealed as main attributes in the earlier cases as well. This case study, in which the culture and tradition are diverse, applies cultural adaptation into the implementation and co-production of ESD well. Parrado et al., (2013) emphasize that co-production of public policy tends to be based on the cultural attributes of a society. ESD is locally relevant. It addresses local as well as global issues. In any society, ESD must be adapted and applied to local culture and tradition. Concepts of sustainable development must be

carefully and meaningfully expressed in other languages, because languages and cultures say things differently (UNESCO, 2006). Education provision must consider what the communities want to happen in their environments. As a result, co-production by any stakeholder cannot ignore the local context of the recipients who are in need of the service. This case study has confirmed the importance of cultural adaptation and does not ignore sensitive issues such as different religions.

Samuels et al. (2009) stated that cultural adaptation is the process of reviewing and changing the structure of a practice to be more suitable for the needs and preferences of a particular cultural group or community. In the case study, the community's needs for their children's future are integrated into the plan. The school cannot ignore the local context of the service users. This aspect is witnessed by the implementation of the nine learning bases that correspond to the local professions. One respondent confirms the importance of the life-skill lessons that will benefit their children's future. He mentions that agriculture has become a tradition in the community. The basis for agriculture in the form of the nine learning bases is helpful for children because when they finish school, they will be able to use this knowledge to earn a living irrespective of their academic abilities (TR1SC, 31st May, 2016)

Co-producers from outside the community who voluntarily participate in the education provision cannot bring their context without adjusting the program to the local users. In this case study, the foreign volunteers' arranged by the private sector are fully informed about the context of the school and the students. They are fully prepared to adjust themselves to the school's regulations, curricula, lesson plans, etc. Additionally, they adjust themselves to the local norms and traditions. The private company that takes care of foreign volunteers considers that foreign languages such as English or Japanese are useful for the students in the long term because the school's location is close to a number of tourist attractions in the south of Thailand. If the school or the public sector cannot afford to hire foreign teachers, the private sector can help. In this case study, the results show that the private company gains mutual benefits from co-producing this service. Overall, cultural adaptation is one of the keys that enable ESD practice to achieve its goals. Together with technology and media usage, it will allow the goal of sustainability to be achieved faster.

Finally, in the output phase, the mutual benefits that exist in every case study are usually those that are the most strongly underlined. As mentioned earlier, co-production happens when people see what they will gain when they give, in either intrinsic or extrinsic forms. Mutual benefit means that each partner shares in the benefits that the activities provide. In terms of co-production, users of many public services are themselves important co-producers (Whitaker, 1980). For instance, teachers cannot give education without co-productive efforts from students. Moreover, police cannot produce public order without the co-productive efforts of citizens. In some political areas, the political system is the primary mover of policies such as the family planning program. In the same way, the benefits of the policy feed back into the political system to increase political support and thus to sustain the program (Wongthanavas, 2003). The results in this case show that there are mutual benefits for the school and its co-producers. Most of them are intrinsic. They consider themselves as givers. Meanwhile, some receive two-fold benefits, such as the private company that arranges the volunteer program for the school.

The intriguing point in the case study is that the self-reliance and self-efficiency of the population is best placed in the output phase, as it is a goal of ESD, as witnessed by the interviewees' quotations on this aspect. For example, one mentioned that people are getting used to be helped (TR5LA, 31st May, 2016). Another stated that people are too reliant on government help (TR7O, 31st May, 2016). The last example emphasizing that this indicator should be shifted to the output section is the comment that some groups of people hope to rely on government help, but that education can teach children to be self-reliant. (TR5LA, 31st May, 2016). The goal of making people self-sufficient and self-supporting is widely mentioned throughout the interviews.

When the figure is rearranged by deleting the indicators that receive negative comments and seem irrelevant to the success of ESD implementation and co-production, the following figure is obtained:



Figure 6.15 Cycle of implementing and co-producing ESD with the most significant factors in case study III after correction (Author's figure).

This figure appears to be more valid than the earlier one. The study uses this figure as the result of the case study. It shows interdependence and leadership in the input phase. Cultural adaptation and the contingency approach are in the process phase and mutual benefits and self-reliance and self-efficiency of population are in the output phase respectively. The indicators that gain the highest citations are cultural adaptation and mutual benefits. They are in the process and output phases, respectively. It can be assumed that the implementation and co-production of ESD need to be focused on the process phase in order to receive the expected output. This will be discussed further in the next chapter.

Whitaker (1980, cited in Porter, 2006) and Alford (2002, cited in Porter, 2006) deal with citizen co-production under at least two situations. Firstly, co-production adds additional value to a public service, but co-production is not vital to its production. Secondly, co-production is an integral part of producing a completed public service but a citizen/client may or may not choose to consume the service. In the case study, co-production from many stakeholders makes the education service provision better in terms of both quality of education and facilities' service provision. The community integrates in education provision, but not everyone participates: individuals can choose whether or not to use the service. Moreover, they can choose to co-produce or not to co-produce with the school. Some of them co-produce education only when requested. This confirms Parrado et al.'s (2013) statement that the better the performance in service provision from local or state governments, the less willingness there is to co-produce the services. Additionally, different policy sectors seem to have a differentiated impact on co-production. Policy areas in which service

providers are highly professionalized, such as medicine, are likely to be less conducive to co-production (Ibid).

Education is not a sector in which people can easily co-produce. It requires some skills and training such as pedagogy and child psychology. Nonetheless, when it comes to ESD, local and cultural adaptation is highly relevant. As a result, people in the community are able to co-produce the subjects in which they are experts. True participation is citizen's participation when redistribution occurs between government and citizens (Arnstein, 1969, cited in Castelnovo, 2015). Co-production is much more than customer/user involvement: it is a value-creating activity that challenges the traditional conception of value creation (Castelnovo, 2015). As a result, the transformational potential of the co-production model is magnified by the use of social media to increase citizen engagement in service provision activities (Leadbeater and Cottam, 2007; O'Reilly, 2010; Nam, 2012; Linders, 2012; Schuurman et al., 2012; Meijer & Thaens, 2013, cited in Castelnovo, 2015). This case study confirms that citizen participation is essential and that co-production can add value to the service provision.

CHAPTER VII

CONCLUSION AND RECOMMENDATIONS

7.1 Discussion and conclusion

According to Pruet Siribanpitak (2008), ESD cannot take place with top-down implementation. Therefore, in the present study, the idea of bottom-up implementation was used to shape the conceptual framework. Civic participation and co-production cannot be ignored when talking about bottom-up policy implementation. This is the starting point for theories which support the bottom-up characteristics of policy implementation. The present study investigates theories and relevant past research regarding SD, ESD and co-production. Through integral synthesis, the research has identified twelve indicators to pursue in the context of the three case studies. The results from the case studies were discussed in the previous three chapters, and the integral discussion and conclusion, including recommendations, are presented in this chapter.

In order to summarize the whole concept of the research and reach conclusions, it is necessary to look back to the conceptual framework. When the data are processed and analysed, the framework is fulfilled with the complements retrieved from the analysis, as shown in Figure 7.2. The model shows the relationship among many stakeholders in the implementation and co-production of ESD in the current situation in Thailand. Moreover, the twelve indicators from the literature review chapter are filtered and selected to identify those that will be the most significant in contributing to future education policy to achieve sustainability. The significant indicators are entered into the adapted system model, namely input, process and output. The figure below displays the model of implementation and co-production of ESD:

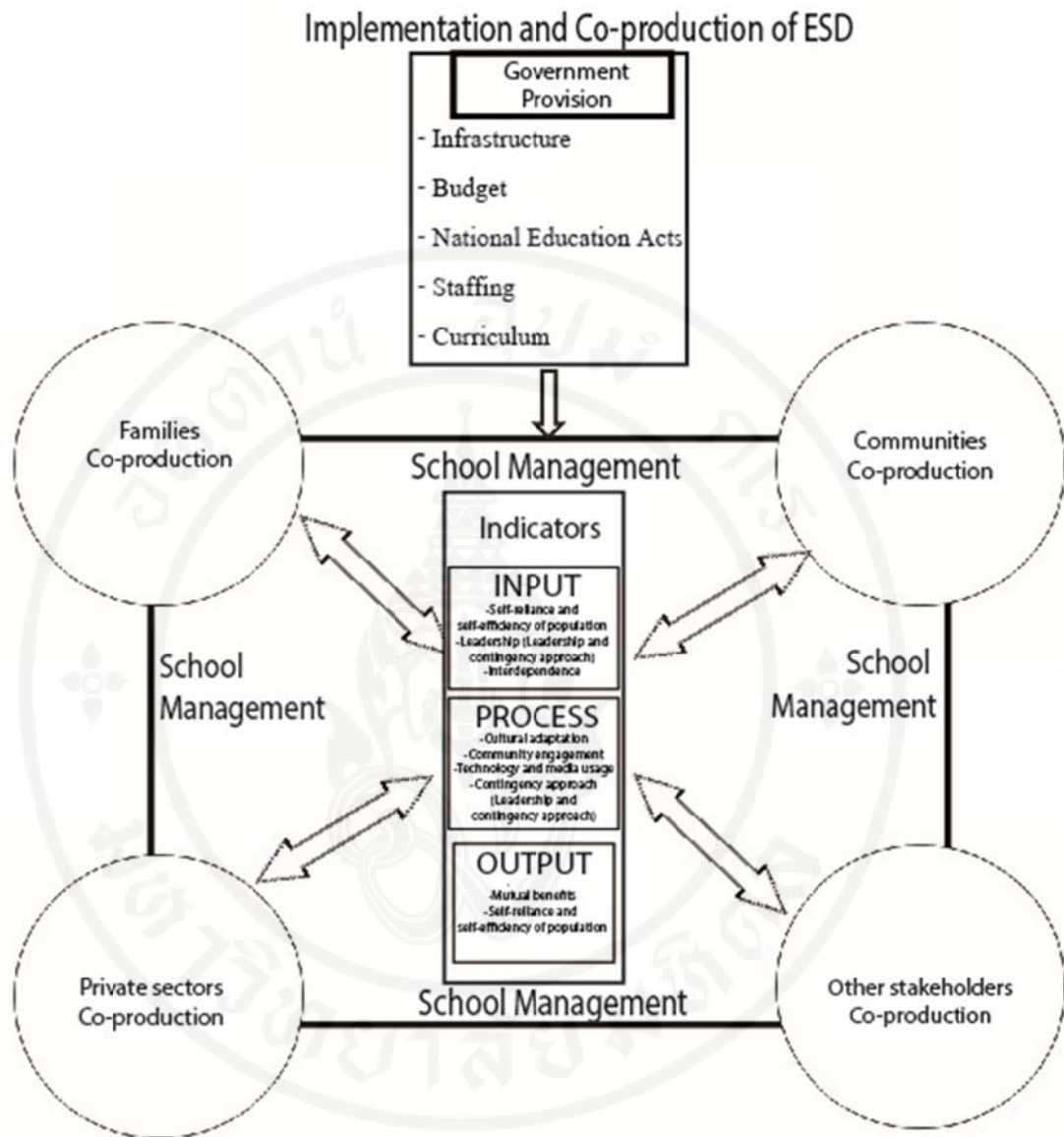


Figure 7.1 Model of the implementation and co-production of ESD (Author’s figure)

The model is described and explained in the discussion of the research objectives. The current state of the co-production of ESD and the examination of the indicators or factors in the cycle of implementing and co-producing ESD, namely the input, process and output of ESD and its co-production in Thailand, are discussed in the following sections.

7.1.1 Discussion of the first objective: to examine the current state of ESD and its co-production in Thailand.

The co-production of ESD can happen at both the individual level and at a more collective level (Nesbit, 2002). In Thailand, the co-production of ESD occurs at many levels, from the individual to the collective. In general, the individuals who regularly co-produce ESD lessons are the students. Nesbit (2002) determines that co-production can happen at the individual level where the direct beneficiary has to participate in service delivery. In this case, these beneficiaries are the students themselves. ESD lessons will never succeed if the students do not co-produce their education by collaborating with the lessons, coming to class or doing assignments. Another example is the individual family, who co-produce the ESD by collaborating with the school for their children's assignments or even teaching their children through homework.

Co-production can take place at a more collective level if one's individual attempts are not enough to drive the desired changes (Ibid, 2002). This is the point at which the research tries to find a model of this type of co-production. The researcher assessed the case studies against the twelve contributing factors. The collective group of people who co-produce the ESD starts from the community, non-profit networks and organizations, private sectors and volunteers, for instance. The ways in which these different collective groups co-produce ESD with the schools affect the models of implementation and co-production of ESD. Furthermore, there is an obstacle which hinders ESD implementation and ESD co-production in Thailand, namely the interpretation of sustainability and ESD itself.

ESD is a contested concept and is open to a number of interpretations. As a result, the combination of the concepts of education and sustainable development, as introduced in the UN Decade of ESD, is new to the teachers, who were initially unsure of how to tackle the issues and were struggling as to how to start this teaching. Meanwhile, there is a lack of a clear framework and content for working with ESD and teachers' willingness to integrate ESD within their teaching: different processes of concretization are apparent (Madsen, 2013). Progress in support of ESD has been relatively easier to monitor in formal than in informal education. In most cases, changes are minor adjustments to existing curricula, texts, training programs, etc., but

in a few others, much larger reforms have been envisioned and started, such as whole school approaches or inter-disciplinary learning (Pigozzi, 2010). These circumstances also happen in Thailand.

However, most of the schools in Thailand apply the Sufficiency Economy of King Rama IX to their curricula, according to the Tenth National Development Plan (2006-2011). They can apply this theory as a practice which contributes to sustainability. Moreover, according to ACCU, “ESD-oriented” activities can take an approach that envisions a sustainable society in which human beings can get along with nature. This is not something new but something that already exists (ACCU, 2007). The two concepts are closely interwoven. Some case studies show that schools use both concepts to gear teaching towards SD.

The school administration is the main body that takes responsibility for providing education services to citizens. It is a top-down implementation; however, there is some space for liberal and local policies and plans to implement suitable education for local citizens. For example, the ‘Moderate Class Learn More’ policy allows schools to bring about many initiatives and ideas to integrate activities and didactic methods into their curricula. In addition, it is the school administration unit that facilitates the co-production. It can be concluded that co-production brings bottom-up concepts to the implementation of education provision.

The better performance in service provision from local or state governments is, the less willing to coproduce the services happen (Parrado et al., 2013). It is evident in the case studies. At the collective level, communities seem to coproduce less when education provision from their schools is satisfying. Comparing case studies I and III to case study II, the level of community engagement in the first two cases proves to be lower, while the school in case study II, which is struggling the most due to lower governmental subsidies, gains more civic participation from the community.

For another aspect regarding the process where co-production intervenes in the policy process, we need to refer back to Table 2.2. If full co-production means “professional and users/communities as co-planners and co-deliverers” (Boviard, 2006, cited in Boyle and Harris, 2009), the case studies may not verify themselves as having full co-production of ESD. The cases may instead reflect user co-delivery of

professionally designed services (Table 2.2). The co-producers are the co-deliverers of the ESD.

7.1.2 Discussion of the second objective: to examine the indicators (factors in the cycle of implementing and co-producing ESD, namely the input, process and output) of ESD and co-production of ESD in Thailand with case studies.

For this objective, the research introduces the twelve contributing indicators synthesized from the theories and the past research in Chapter II. Then, the indicators are presented in graphical form, namely input, process, and output (Table 2.5). The researcher applied these twelve indicators to create the interview guidelines for the semi-structured interviews with the stakeholders of the three cases. Having collected the data, the researcher analyzed it into graphical form. The most significant indicators of each process were identified.

7.1.2.1 Input

Of the twelve indicators, self-reliance and self-efficiency of the population, democratic participation, equitability, the leadership and contingency approach and interdependence are considered to serve as input to the implementation and co-production of ESD. When the data were analyzed and put back into graphical form, some non-significant indicators were removed. Then, the three input graphs were combined in order to compare and contrast the cases to highlight the importance of the input of the cycle:

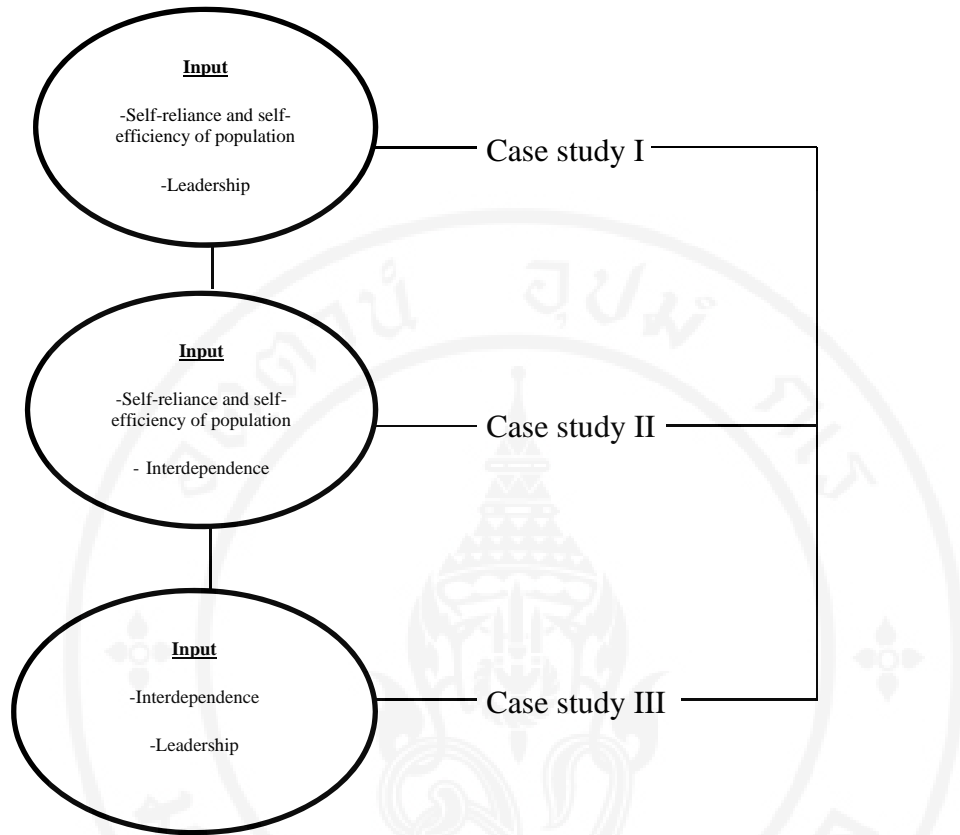


Figure 7.2 Input of the implementation and co-production of ESD from the three case studies.

From the graph, self-reliance and self-efficiency of the population, the leadership and contingency approach and interdependence are the most significant contributing factors to the implementation and co-production of ESD. The input can be considered to represent the community’s attributes and characteristics. This means that community attributes and culture greatly affect the level of civic participation and co-production of governmental service provision. The result affirms Nestbit’s (2002) statement that the variables include the demographic characteristics of the community and their locus of shared norms and values.

7.1.2.1.1 Self-reliance and self-efficiency of population

The interesting excerpts in the table below (Table 7.1) show that the comments of the respondents about the self-reliance and self-efficiency of the population are significant to the implementation and co-production of ESD practices in the case studies. The self-reliance and self-efficiency of the population reflect the capacities of the people in the community. Case studies I and II show greater relevance of this indicator than does case study III. Although they are strongly evident throughout the interviews, the comments from case study III regarding self-reliance and self-efficiency of the population cannot guarantee that it exists in this case study. The interesting excerpts below show the respondents' opinions toward the aspect. The parts in bold are the most interesting evidence of its significance to the case studies:

Table 7.1 Quotations regarding self-reliance and self-efficiency of the population in the case studies

INDICATORS	QUOTATIONS
Self-reliance and self-efficiency of population: excerpts from case study I	<ol style="list-style-type: none"> <li>1. Most of the people here can live on their own. Few of them are really poor. Not many. (ST1SC, June 14th, 2016) <li>2. They are self-reliant. Although they do not own any land, they earn their living as employees. They are diligent. Even the 200-300 baht wages they get are enough for them, because they live a simple life. They can live on one cup of chilli paste for a meal. People here are self-reliant. Natural resources here are not scarce. Most people earn their living properly through agriculture. There's a small number who don't do the right things, but they are a minority. The majority does agriculture.... People on the plains cannot do like they do. Even if they have a square meter of land, they do not leave it empty (ST7O, June 14th, 2016) <li>3. Most of the male population are self-supported but there are some women who are unemployed. I'm more worried about the female population. (ST5LA, June 15th, 2016)

Table 7.1 Quotations regarding self-reliance and self-efficiency of the population in the case studies (cont.)

INDICATORS	QUOTATIONS
<p>Self-reliance and self-efficiency of population: excerpts from case study I</p>	<p>4. We train big boys to do harder jobs such as carpentry for construction. The girls are trained for household jobs. We cannot take care of them for their whole lives. At least, we are sure that they will survive with the life skills they have. (ST6O, June 14th, 2016)</p> <p>5. Before we improve the school, we need to look at the efficiency of teachers first. The administrator must be smart. Then, the school administrator and the teachers must collaborate to be role models. They have to be a good example, do good things for the students to follow. After that, the students will tell their parents about what they've seen. The parents may consider joining in further collaborative efforts". (ST4FC, June 15th, 2016)</p>
<p>Self-reliance and self-efficiency of population: excerpts from case study II</p>	<p>1. The school is small and receives only a small subsidy from the government. At one point, the school was about to be closed down because it was too small. But the community saw that it would cause problems with access to education of the children in the neighbourhood. We fought until the school was allowed to stay open...even though they never receive enough subsidy, the school and community fight for themselves. Now they can stand up by themselves. (TY7O, 23th May, 2016)</p> <p>2. Sustainability is about to be able to stand up by ourselves. Everybody in the community can join how to create sustainable development. I think that the school is going the right way. Because when the students complete their studies here, they know how to do their jobs and earn their livings... they link families, parent, community, etc. I think it is a sustainable development for children. (TY8O, 23rd Sept, 2016)</p> <p>3. Nowadays, we are mostly self-reliant. We try to adapt the Sufficiency Economy into the classrooms. We do not just wait for the subsidy. It's not enough. We can generate small amounts of money and food for the students. The students here have both academic and life skills. If the students don't get an opportunity for higher education, they can earn their living through the life skills they have. The students are self-reliant and the school is as well. (TY1SC, 17th May, 2016)</p>

Table 7.1 Quotations regarding self-reliance and self-efficiency of the population in the case studies (cont.)

INDICATORS	QUOTATIONS
<p>Self-reliance and self-efficiency of population: excerpts from case study II</p>	<p>4. Family finance is still a problem; however, if we collaborate to do things, we can achieve our goals. If everybody collaborates, we can complete every task. (TY6CF, 17th May, 2016)</p> <p>5. We want to be self-reliant but somehow and sometimes we cannot. For example, we grow vegetables, so we will have enough to eat and to sell. Anyway, external factors, like natural disasters and drought, hinder this. (TY2FC, 17th May, 2016)</p>
<p>Self-reliance and self-efficiency of population: excerpts from case study III</p>	<p>1. It is not always correct. If the students are not efficient, it means that the education will not be sustainable. Or if the students are efficient, would the education be sustainable? It is true in one aspect. If the students are good, it is easier to move forward. It depends on the education system as well. If the government are not ready to do it, it may need aid from private sectors. (TR8PC, 31st May, 2016)</p> <p>2. The people here are quite poor. The school doesn't ask much from them. In terms of labour, they can help. For example, we do not hire a janitor. At least once a month, the parents and people in the community come to the school to do the cleaning. (TR1SC, 31st May, 2016)</p> <p>3. They live their sufficient lives. They do rubber plantation and palm plantation. Moreover they do agriculture, chicken farms, and fishery. These occupations don't make people wealthy but they keep them from starving. (TR4LA, 31st May, 2016)</p> <p>4. People need to be self-reliant. We rely on state help, but we should rely on ourselves first. (TR7O, 31st May, 2016)</p> <p>5. In my opinion, people should rely on themselves. Some groups of people hope to rely on government help or politicians' aid. This makes them weak. In my opinion, Thai people are weak. I hope that education can teach the kids to be self-reliant. (TR5LA, 31st May, 2016)</p>

Self-reliance and self-efficiency of the population is a good quality which is expected to appear in a society that needs the co-production of ESD. From the table, many of the respondents' comments and opinions highlight the importance of this factor and demonstrate that it can lead to successful ESD implementation and co-production. The goal of ESD provision goes beyond knowledge to encompass all skills that help people to sustain their lives, especially in sustainable ways. Self-efficiency means the ability to complete any tasks. It is important that people can survive in any circumstances without expecting help from others. In case studies I and II, this point is significant. The people are diligent and know how to sustain their lives (ST7O, June 14th, 2016). The schools in case studies I and II do not wait for governmental aid and subsidies. They never receive enough subsidies, so the school and the community fight for themselves. Now they can stand up by themselves (TY7O, 23th May, 2016) and generate some money from school activities to sustain themselves (TY1SC, 17th May, 2016).

Meanwhile, case study III, which receives more co-production supplied material and money, appears to show less self-reliance and self-efficiency of the population. The self-reliance and self-efficiency of the population is an issue that the community and the leaders attempt to highlight. People need to be self-reliant and not depend on the state for help (TR7O, 31st May, 2016; TR5LA, 31st May, 2016). The mindset of the people here needs to be reset. The researcher interprets the comments as a goal that people in the case study want to achieve. Education is a way out for the people in case study III. This aspect is thus shifted to the output section.

7.1.2.1.2 Leadership and contingency approaches

Leadership and contingency approaches represent an indicator that can be placed in both the input and the process stage. Leadership is a good personal quality, while contingency approaches are ways to organize and manage situations depending on the nature of the environment to which the organization relates (Scott, 1992). The three case studies show that leadership is a significant factor. The meaningful excerpts in the table below (Table 7.2) show the respondents'

perceptions toward leadership and contingency approaches. The bolded parts are the most interesting evidence of its significance to the case studies.

Table 7.2 Quotations regarding Leadership and Contingency Approaches in the case studies

INDICATOR	QUOTATIONS
Leadership and contingency approaches: excerpts from case study I	<p>1. Before we improve the school, we need to look at the efficiency of teachers first. The administrator must be smart. Then, the school administrator and the teachers must collaborate to be role models. They have to be a good example, do good things for the students to follow. After that, the students will tell their parents about what they've seen. The parents may consider joining in further collaborative efforts. (ST4FC, June 15th, 2016)</p> <p>2. Here, people love the school leader, because he always helps them a lot. That's why when he asks for something, people do not hesitate to give back. He's straightforward. He's stayed here for 22 years. There's been no question about money. They've never asked what the money is used for. If they donate 100,000 baht, when they see what the school is doing, it's more than that amount (ST7O, June 14th, 2016)</p> <p>3. In the past, the school mostly asked for the collaboration from the communities, but in fact, we need something more than participation. We need people who have abilities from the community to help us improve the education. The teachers need to be role models; otherwise, no one will want to join us. (ST5LA, June 15th, 2016)</p> <p>4. I volunteer because I have seen the ideology, transparency and many things in the leader. (ST8O, June 14th, 2016)</p> <p>5. Leadership is essential to the school administration because it is the headmaster who can direct the school management. To be a good headmaster brings a lot of collaboration from many such as teachers, parents, and community. The headmaster has been working here for 20 years. He's gained a lot of respect. People always collaborate with the school because they trust in him. Leadership is important. (ST2SC, June 14th, 2016)</p>
Leadership and contingency approaches: excerpts from case study II	<p>1. The leadership is important both for the teachers and students. Good leaders should sacrifice themselves for others. The teachers here do it quite a lot. ... The leadership in students is also obvious. We can see that from the students' buddy system. (TY7O, 23th May, 2016)</p>

Table 7.2 Quotations regarding Leadership and Contingency Approaches in the case studies (cont.)

INDICATOR	QUOTATIONS
Leadership and contingency approaches: excerpts from case study III	<p>2. Leaders are very important, especially in education. If people have faith in the leader, everything will be done easily. Then if they gain respect once, they can do it a second and a third time. (TY1SC, 17th May, 2016)</p>
	<p>3. The leaders have to be the pioneers in doing everything. When the leaders start, the members can follow. The members tend to obey their leaders. (TY6CF, 17th May, 2016)</p>
	<p>4. It is necessary. We have an example when people did not have faith in the leader. The people disliked the ex-headmaster here because he was ignoring his jobs. So, they appealed to the higher administration to fire him. Nobody was happy. (TY5LA, 17th May, 2016)</p>
	<p>5. Good leaders have to have a good heart. We can discuss the problem with them. It helps a lot in development. If the leaders ignore it, it's not okay. (TY2FC, 17th May, 2016)</p>
	<p>1. AD volunteers know what they want to do. We are confident that if we provide good information to our volunteers, they can be good teachers to the students. (TR8PC, 31st May, 2016)</p>
	<p>2. The village headman always calls for the meetings to listen to the villagers' opinions. He does not do things on his own authority. (TR2FC, 31st May, 2016)</p>
	<p>3. The leaders have to sacrifice themselves, in every aspect from the family aspect to work aspect. In my case, I sacrifice myself for the happiness of the family and my students. Everybody needs to get along in moving things forward. If not, it becomes difficult. (TR1SC, 31st May, 2016)</p>
	<p>4. It is essential. Many projects and aids come to our village. It is because they see the potential in the past projects. Leadership leads the project to us. (TR4LA, 31st May, 2016)</p>
	<p>5. Leadership is what people can have even though they are not assigned any positions. People are efficient because they have good leaders. They listen to their leaders. Anyway, people can naturally become leaders and have leadership as a characteristic. If they sacrifice themselves, do their duties, they will gain faith and respect from others. This is leadership. (TR5LA, 31st May, 2016)</p>

Leadership is essential in every context, as evidenced in the three case studies. For the schools, which manage and provide education services to the pupils, leadership is essential at every level: from top to bottom or from the management team to policy implementation. The excerpts from the interviews underline the significance of this factor. The vision of the leaders and their behaviour and characteristics are strongly highlighted, as leaders have to be role models. For example, an excerpt from case study I states that the efficiency of teachers is important. Moreover, the administrator must be intelligent and must collaborate with the teachers to serve as role models (ST4FC, June 15th, 2016). Numerous respondents emphasized the keyword “role model” (ST5LA, June 15th, 2016; TY6CF, 17th May, 2016).

The good characteristics that people expect their leaders to have are straightforwardness, honesty, transparency, good ideology, sacrifice and a good heart, and finally democratic character. In terms of straightforwardness and honesty, the excerpt from case study I confirmed that these characteristics help with the implementation and co-production of ESD, as a straightforward leader encourages people to co-produce education with the school (ST7O, June 14th, 2016). Moreover, people volunteer because they have seen characteristics such as ideology and transparency in the leader (ST8O, June 14th, 2016). Therefore, transparency and good ideology are among the key attributes in leadership. Furthermore, many mention sacrifice and a good heart. Leadership is important to most parties, including teachers and students. Good leaders should sacrifice themselves for others. (TY7O, 23th May, 2016). Sacrifice is also cited as an important aspect of leadership. Leaders have to sacrifice themselves in every aspect, from family to work. The respondents sacrifice themselves for the happiness of their families and the students. (TR1SC, 31st May, 2016). Finally, one respondent referred to a leader who regularly called meetings to listen to the villagers’ opinions rather than doing things on his own authority (TR2FC, 31st May, 2016). This shows the characteristic of democracy, which is key to the implementation and co-production of ESD.

7.1.2.1.3 Interdependence

Interdependence expresses primarily the interconnectedness among actors, resources and/or tasks (Blau, 1964; Pfeffer and Salancik, 1978). Moreover, interdependence can be both a cause and a consequence of collaboration and cooperation among agencies and organizations (Hillman, Whiter and Collins, 2009). To enhance service provision, interdependence is essential. The meaningful excerpts in the table below (Table 7.3) show the respondents' perceptions toward interdependence. The sections in bold are the most interesting witnesses of its significance to the case studies:

Table 7.3 Quotations regarding Interdependence in the case studies

INDICATOR	QUOTATIONS
Interdependence: excerpts from case study I	<p>1. There is interdependence in the school. The people in the community have knowledge and we have the materials. In this way, we can teach basket weaving, for example. We invite local wisdom to do this, because the teachers can't. The school instead provides tools and materials. In this way we are interdependent. (ST4FC, June 15th, 2016)</p> <p>2. The sustainable education needs to have collaboration from every institution: home, temple, and school (BOR WORN) (ST9O, June 14th, 2016)</p> <p>3. The temple commits itself to have duties in teaching Buddhism and moral studies. Moreover, for the religious activities, the temples ask the school for collaboration. We comply with their requests and arrange a schedule for Buddhist lessons and help each other to complete the activities. We also do these kinds of activities with the community as well. In terms of private companies in the neighbourhood, mostly it is the school who ask for some kind of help such as donations. For example, when we need to repair the roof of the school building, we ask for external donations for tiles. (ST2SC, June 14th, 2016)</p>

Table 7.3 Quotations regarding Interdependence in the case studies (cont.)

INDICATOR	QUOTATIONS
<p>Interdependence excerpts from case study II</p>	<p>4. In the municipality, we have a garbage management problem. They cannot find s place to dump the household waste and destroy it. The school sees this problem as a community crisis. Therefore, we arranged a meeting by inviting leaders, representatives and stakeholders from the communities to discuss solutions. We took this opportunity to be a leader in solving this problem by training the students to reduce their domestic waste first. This is a more sustainable way. The students are the main actors to link home, family, temple, community, local administrators, etc., together. As well as the temple, the school can be the centre of the community. (ST2SC, June 14th, 2016)</p>
	<p>5. We, in the name of the church, registered as the Emanuel foundation. We adopt the orphan children or children whose families live in the high mountains to stay with us and send them to school. The foreign missionaries from abroad and we understand that. We saw the condition of the children here who need help. We have the heart to help underprivileged children. (ST6O, June 14th, 2016)</p>
	<p>1. I think that interdependence is very important because we cannot stand alone. We need collaboration. Home, temple, and school (BORWORN) is also important. Parents have to teach their children to stick with the temple and dhamma. Parents themselves should stick with school and teacher. These three things need the collaboration. (TY7O, 23th May, 2016)</p>
	<p>2. The education development needs a lot of parties' collaboration. The teachers who are like the representative from the government, the students, the communities, altogether have to collaborate to have a sustainable education. (TY7O, 23th May, 2016)</p>
	<p>3. 100% people need to be interdependent among them. I remember the King Rama IX's speech and I take it seriously that home, temple and school have to be interdependent. (TY6CF, 17th May, 2016)</p>
<p>4. The goal of sustainable future here is that we have the school continues together with community and temple. It was about to be closed down but we tried to sort things out until the school could continue. The people in the community have to collaborate with the school staffs. We have to help each other. (TY3FC, 17th May, 2016)</p>	

Table 7.3 Quotations regarding Interdependence in the case studies (cont.)

INDICATOR	QUOTATIONS
Interdependence: excerpts from case study III	<p>1. I agree with this aspect. We cannot stand alone. When we lack something, we may need people to contribute. If we lack knowledge, we need other people to give us knowledge. If we lack labour, we need people to help us out... we try to tell people that the school is theirs, not ours. They should come and help to move it forward (TR1SC, 31st May, 2016)</p> <p>2. Temple, school and mosque need to be interdependent. (TR4LA, 31st May, 2016)</p> <p>3. I agree. Everything has to be interdependent. Temples are also important. Dhamma teaching helps to make good people. There is a very good temple in this neighbourhood. As well as being a place of worship, it conserves a forest where the students can learn about forest ecology. (TR4LA, 31st May, 2016)</p> <p>4. The community and the school are interdependent. We can share and borrow things from the school when we arrange any activities. (TR6O, 31st May, 2016)</p>

ESD policy consists of many practices and activities that need collaboration from other sectors. A school is a governmental agency and a legal entity. They can do their jobs under the state rules and regulations but have the right to manage their internal affairs by themselves. However, they cannot stand alone. Communities, especially local Thai ones, are based on three institutions: Home, Temple and School (the BOR WORN model). The case studies show the characteristics of interdependence by having all these parties share and participate in many school practices, as witnessed by many comments from the respondents. Sustainable education needs collaboration from each of these three institutions. BOR WORN is mentioned thorough King Rama IX's Theory; therefore, those who implement the education service should take it seriously that Home, Temple and school have to be interdependent (TY6CF, 17th May, 2016). In many cases, the term 'temple' also refers to churches and mosques (ST6O, June 14th, 2016; R4LA, 31st May, 2016). The case study respondents show that everybody has to commit to their duties in supporting these three institutions. Without any one of these units, the community cannot be strong and complete. It can be concluded that the

implementation and co-production of ESD in the case study schools focuses on the interdependence among these three institutions

However, the case studies show that there is interdependence among other agencies as well, such as the school and the LAO or other external networks. Educational development needs collaboration from numerous parties. The teachers, who are representatives of the government, the students and the communities all have to collaborate to achieve sustainable education (TY7O, 23th May, 2016). For example, the people in the community have knowledge and the schools have the materials. People with local wisdom are invited to co-produce the lessons that the teachers do not know about, while the school provides tools and materials. In this way they are interdependent. (ST4FC, June 15th, 2016). People cannot stand alone. When they lack something, they may need other people to contribute (TR1SC, 31st May, 2016). Additional help from governmental agencies or other sectors cannot be guaranteed. Communities, schools and temples should take care of themselves by complementing and fulfilling one another's needs. The characteristics of a society in which every sector in the community is united and interdependent represent an advantage to the implementation and co-production of ESD.

7.1.2.2 Process

From the twelve indicators, cultural adaptation, interdisciplinary approaches, community engagement, collaborative approach and partnership, technology and media usage and leadership and contingency approach are found in the process stage of the implementation and co-production of ESD. When the data were analyzed and put back into graphical form, some non-significant indicators were removed. Then, the three process graphs were combined in order to compare and contrast the cases to highlight the importance of the process stage of the cycle:

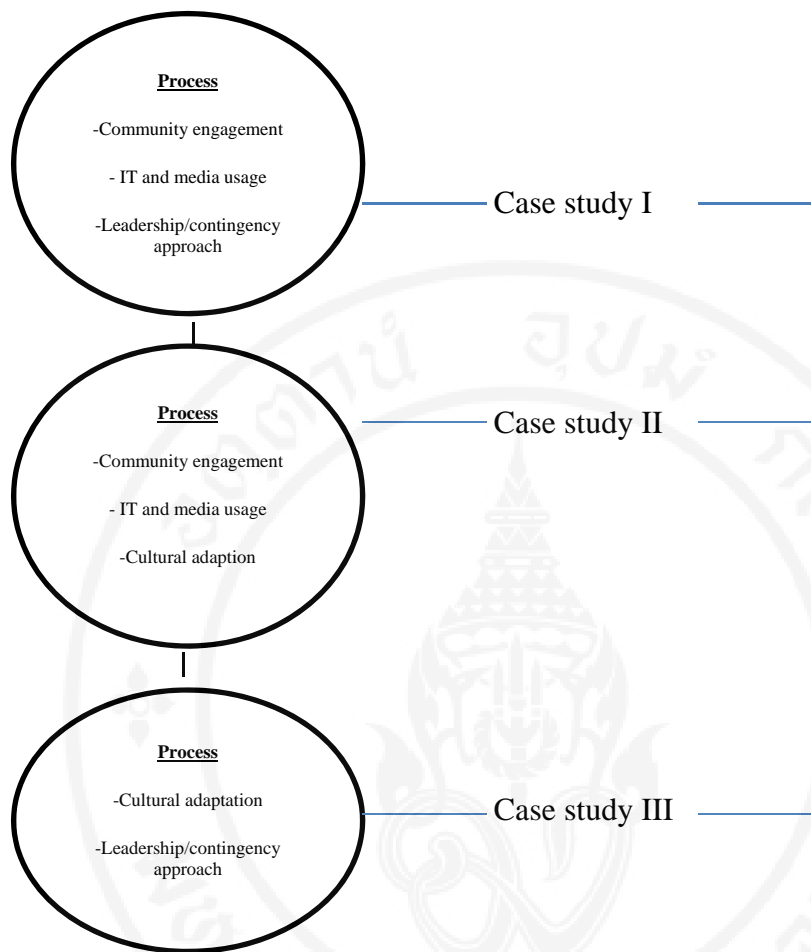


Figure 7.3 The process of the implementation and co-production of ESD from the three case studies.

From the graph, the highest frequencies and the most significant indicators are community engagement, technology and media usage, leadership and contingency approach and cultural adaptation. The process of implementation and co-production of ESD proves to be more strongly emphasised than the other two segments: that is, the input and output. It can be assumed from the three case studies that the implementation and co-production of ESD needs to focus more on the process phase of the cycle.

7.1.2.2.1 Community engagement

The concept of community engagement links the term 'community' to 'engagement' and shift the focus from the individual to the

collective (CDC, 1997). Community engagement is important to solve local problems and voice the community’s needs to the service providers. The most outstanding excerpts are presented in the table below to show the opinion of the stakeholders of the implementation and co-production of ESD in the case studies toward community engagement. The bolded excerpts are the most interesting witnesses of its significance to the case studies.

Table 7.4: Quotations regarding community engagement in the case studies

INDICATOR	QUOTATIONS
<p>Community Engagement: excerpts from case study I</p>	<p>1. It is community-based education management. There are seven steps. We train the children to question and ask questions to the community where they live to study the community problems. The first step is that they have to study their community and its problems by investigating and asking the people. They collect the data in every aspect, like economy, politics, laws and community rules, professions, religions and social contexts (ST1SC, June 14th, 2016).</p> <p>2. Our strongest point is Sufficiency Economy based learning. The community can come to study and use the school as a learning hub. This year, we are using the 17 Global Goals in SDGs as the objectives to reinforce the community. (ST3FC, June 14th, 2016)</p> <p>3. This factor is very important. Our community is strong: there are a lot of collaboration groups like the housewives’ group, the elders and other professions. They are ready to give knowledge and help to the school. Vice versa, the school opens for them as well. (ST7O, June 14th, 2016)</p> <p>4. The school has been trying to invite the community to collaborate with them, even if they do not one hundred percent succeed. As a member of the School Board, I appreciate the policy. It’s a good policy. They attempt to have the community in the school activities. It’s new knowledge for the community as well. Before this happened, people thought that the school could do things on their own. It’s not true. After the people participated, the community has also improved, as well as the school (ST5LA, June 14th, 2016)</p> <p>5. The school and the community always organize activities together... For example, we arranged a waste reduction project with the help of the community. We arranged an open market called Kard Bai Tong (Banana Leaf market). The products from this market are sold without plastic bags. The community needs to collaborate by not using plastic bags. (ST2SC, June 14th, 2016)</p>

Table 7.4: Quotations regarding community engagement in the case studies (cont.)

INDICATOR	QUOTATIONS
<p>Community engagement: excerpts from case study II</p>	<p>1. I think it is very important because the children come from the community. The children obey their parents. When they are at school, they obey the teachers, and the teachers tell them to respect their parents. When we tie the school with the community, it is a good thing. It is because the community is based on a beautiful culture. If they stay with the school, the culture will not fade away. (TY7O, 23rd May, 2016)</p> <p>2. In my opinion, the greatest mentors of the children are the teachers. Besides the teachers, the community here is also important. The community respects the teachers who manage the education for their children. The teachers therefore are ones who manage it and present it to the community. Then the community engages in giving feedback or in co-producing something. (TY1SC, 17th May, 2016)</p> <p>3. People engage in conservation of traditions by completing the Learning Centre in the school with their old, obsolete equipment. (TY6CF, 17th May, 2016)</p> <p>4. I agree with the community engagement aspect. If people ignore the school, the teachers will discourage. But here most of people collaborate with the school. (TY4LA, 18th May, 2016)</p> <p>5. It is necessary to have the community collaborate with the school. We have an example of a school in our neighbourhood which did not get along with the community. Eventually the school had to be closed down. (TY2FC, 17th May, 2016)</p>
<p>Community engagement: excerpts from case study III</p>	<p>1. Firstly, we need to define the word “sustainability”. If it means “continuous”, it may not be concerned with our volunteer program. We cannot force volunteers from aboard to stay as we need. It’s a matter of timing. When they are on holidays and want to come, we have our school break. (TR8PC, 31st May, 2016)</p> <p>2. Yes. Teachers, parents, local administration people, we all give a hand in doing school things. (TR2FC, 31st May, 2016)</p> <p>3. The people here are quite poor. The school doesn’t ask much from them. In terms of labour, they can help. For example, we do not hire a janitor. At least once a month, the parents and people in the community come to the school to do the cleaning. (TR1SC, 31st May, 2016)</p> <p>4. In the school development activities, the parents regularly attend the events and helps in what they can do. The parent engagement here is very good. (TR4LA, 31st May, 2016)</p>

ESD should respond to local needs. For this reason, local people are willing to engage in co-producing it because it relates to their needs. Moreover, people engage in solving problems because they are their problems as well. The case study data confirms that ESD should start by studying the local problems and needs. Case study I confirms this and suggests community-based education management. The first step is to study the community and its problems by investigating and asking the people. They collect the data on every aspect, such as the local economy, politics, laws and community rules, professions, religions and social contexts (ST1SC, June 14th, 2016). Finally, the people are directly and indirectly involved in the process. ESD is a good policy. When the community co-produces the school activities, they learn new knowledge that benefits them as well. Before the policy was implemented, people thought that the school could do things on its own. Since people started to participate, the community has also improved along with the school (ST5LA, June 14th, 2016)

In the case studies that show better education service provision, less community engagement is seen. However, community members are willing to collaborate with the school when requested. The teachers are the ones who manage the education and present it to the community. After that, the community engages in giving feedback or in co-production (TY1SC, 17th May, 2016). If the community ignores the school, the teachers will be discouraged. However, most of the people in the case studies collaborate with the school (TY4LA, 18th May, 2016). The school is still an institution that people respect, and they voluntarily commit to take on some assignments from the school if they are able. For example, an excerpt from case study III shows that even if people are quite poor, they are still willing to help. The school doesn't ask much from them: just some labour to develop the school environment (TR1SC, 31st May, 2016). In the school development activities, the parents regularly attend events and help where they can. Parent engagement is very good (TR4LA, 31st May, 2016).

Among the three case studies, the researcher observes that the school that encounters the most difficulties and problems gains a lot more interest from the community, which does more to co-produce its education provision. The feeling that the school should strive to be a part of the community and

that they have a duty to the community in educating their children encourages this civic involvement. The community engagement aspect is another indicator which is strongly concerned with the co-production and implementation of ESD. Community engagement is obvious in this case study in many guises: as members of the school board, lecturers, promoters of activities, etc. They try to maintain the school for their children. This collaboration is necessary. One respondent gave an example of a school in the area which did not get along with the community, and which eventually had to be closed down (TY2FC, 17th May, 2016). The community do not allow this to happen. For this reason, the level of community engagement is high.

7.1.2.2.2 Cultural adaption

Cultural adaptation shows its importance in both co-production and the ESD context. The co-production of a public policy tends to be based on the cultural attributes of the society (Parrado et al., 2013). Meanwhile, ESD must be locally relevant. It is necessary to interpret the term ‘sustainability’ in local settings (UNESCO, 2006). Cultural adaptation is another point that is highlighted in the SD, ESD and co-production literature. The interesting excerpts in the table below show that according to the opinions of the respondents, the cultural adaptation indicator is significant. The bolded parts are the most interesting witnesses of its significance to the case studies:

Table 7.5 Quotations regarding cultural adaption in the case studies.

INDICATOR	QUOTATIONS
Cultural adaptation: excerpts from case study I	<p>1. In Chiang Rai province, there is a lot of deforestation. Therefore, it is necessary to solve the community problems. We have elders aged more than 50 and the younger generations who move out of town to pursue their studies. It is necessary to reinforce the community by adapting BORWORN theory. Our local knowledge is about growing herbs and making herbal medicines. The qualities and standards have to be improved from the recipes to packaging. We need to give the villagers this knowledge. They will apply it to plant herbs in their spare time first. Then they can expand their farms to plant them in the hills instead of deforesting. The knowledge will disseminate from village to village (ST3FC, June 14th, 2016)</p>

Table 7.5 Quotations regarding cultural adaption in the case studies.

INDICATOR	QUOTATIONS
Cultural adaptation: excerpts from the case study II	<p>2. We do agriculture. When we adopt the local knowledge into the curricula, we do it in a sustainable way. Students complete the lessons in sustainable agriculture, and later they can use it to earn their living. (ST4FC, June 15th, 2016)</p>
	<p>3 It is a community-based education management. There are seven steps. We train the children to question and ask questions to the community where they live to study its problems. The first step is that they have to study their community and its problems by investigating and asking the people. They collect data on the economy, politics, laws and community rules, professions, religions and social contexts. (ST1SC, June 14th, 2016)</p>
	<p>4. We build and shape our children. We give advice to their parents about their future careers. They can choose what they want to do from what they have learned because the curricula correspond to their lives. (ST8O, June 14th, 2016)</p>
	<p>5. The school has good management in adapting the curricula to the local needs. (ST6O, June 14th, 2016)</p>
	<p>1. I see that the school tries to conserve traditions. In this area, there are a lot of butterfly lizards. People raise them as a profession. The school has incorporated this into their curricula in order to preserve the old traditions and culture. (TY8O, 23rd Sept, 2016)</p>
<p>2. Yes, we arrange the classrooms according to the National Education Act, our community contexts, our resources, and the Teachers' Council. (TY1SC, 17th May, 2016)</p>	
<p>3. We adopt the local wisdom to teach in the classroom according to the <i>Moderate Class More Knowledge</i> policy. When the government implemented the policy, we didn't have any problem with it because we already had this kind of classrooms. We invite local mentors to give lectures. (TY1SC, 17th May, 2016)</p>	
<p>4. We conserve the old tradition in the school in terms of tools and devices as well as knowledge. For example, for rice farming, it's hard to see the planting of the germinated seedlings by hands. We keep this practice to teach the students. (TY5LA, 17th May, 2016)</p>	
<p>5. The school arranges classes according to the Sufficiency Economy. They have a variety of classrooms for careers. But I suggest that they should not to have too many of this kind of class. Some parents do not agree with them: they want their children having more academic classes. (TY4LA, 18th May, 2016)</p>	

Table 7.5 Quotations regarding cultural adaption in the case studies.

INDICATOR	QUOTATIONS
Cultural adaptation: excerpts from the case study II	<p>1. I see that the school tries to conserve traditions. In this area, there are a lot of butterfly lizards. People raise them as a profession. The school has incorporated this into their curricula in order to preserve the old traditions and culture. (TY8O, 23rd Sept, 2016)</p> <p>2. Yes, we arrange the classrooms according to the National Education Act, our community contexts, our resources, and the Teachers' Council. (TY1SC, 17th May, 2016)</p> <p>3. We adopt the local wisdom to teach in the classroom according to the <i>Moderate Class More Knowledge</i> policy. When the government implemented the policy, we didn't have any problem with it because we already had this kind of classrooms. We invite local mentors to give lectures. (TY1SC, 17th May, 2016)</p> <p>4. We conserve the old tradition in the school in terms of tools and devices as well as knowledge. For example, for rice farming, it's hard to see the planting of the germinated seedlings by hands. We keep this practice to teach the students. (TY5LA, 17th May, 2016)</p> <p>5. The school arranges classes according to the Sufficiency Economy. They have a variety of classrooms for careers. But I suggest that they should not to have too many of this kind of class. Some parents do not agree with them: they want their children having more academic classes. (TY4LA, 18th May, 2016)</p>

The case studies have their own duties to improve the situation of illiteracy while trying hard to achieve other goals. There are three pillars in the community that people need to be concerned with: the environment, society and economics. The children do not need only academic skills, but also other skills such as critical thinking and life skills. Schools have a duty to embed good attitudes towards caring about the environment, society, culture and tradition, etc., so that the children will have a strong, caring mindset towards their communities. Therefore, the adaptation of local culture and tradition to the curriculum is essential, and it is outstanding in this research as a significant indicator. Many of the interview excerpts highlight the importance of applying local knowledge to the curricula. For example, in case study I, the school incorporates local knowledge in a sustainable way. Students can thus earn a living by using the sustainable agriculture techniques they

were taught at school (ST4FC, June 15th, 2016). The school builds and shapes children with curricula that correspond to their lives (ST8O, June 14th, 2016), and uses good management in adapting the curricula to local needs (ST6O, June 14th, 2016). This is seen in the other cases as well. An example from case study II shows that the school tries to conserve local traditions, such as the raising of butterfly lizards (TY8O, 23rd Sept, 2016).

Co-production in the form of supplying material is also present. The schools are aware that traditional tools and devices are precious in conserving local culture. They thus conserve the old traditions by collecting and using tools and devices as well as knowledge (TY5LA, 17th May, 2016). Moreover, local mentors and experts are invited to give lectures to the students and the community. The elders help in transferring knowledge to the next generations (TY1SC, 17th May, 2016; TR5LA, 31st May, 2016). In this way, schools can conserve customs and traditions while adding a range of activities into the curricula.

Schools frequently mentioned the Sufficiency Economy as a means by which they can apply local culture. All of the schools in the case studies used this theory in their classrooms. According to ACCU (2007), ESD-oriented activities are those with more than a single issue, taking an approach that envisions a sustainable society in which humans can coexist with nature. This is not something new, but something that already exists. In the Thai context, the Sufficiency Economy is one practice that leads to SD. The school arranges career-based classes according to the Sufficiency Economy. For instance, the school in case study III teaches the basis for agriculture in the form of nine learning bases concerning the Sufficiency Economy despite the fact that the outcomes of such teaching are not evident in the short term, but only when students finish school and start work (TR1SC, 31st May, 2016).

7.1.2.2.3 Technology and media usage

Citizens may need some specific production skills or knowledge to provide positive coproduction (Alfors 2002; Levine 1984, cited in Jakobsen, 2012). Furthermore, citizens' co-production often increases if they have certain tools or facilities (Watanabe 2013; Tsai 2013; and Jakobsen 2012). The

technology and media usage indicator is highly relevant to the implementation and co-production of ESD, as highlighted in the following quotes.

Table 7.6: Quotations regarding technology and media usage in the case studies.

INDICATOR	QUOTATIONS
<p>Technology and media usage: excerpts from case study I</p>	<ol style="list-style-type: none"> 1. Everybody agrees to collaborate: we do the presentation and keep them updated via social networks. (ST3FC, June 15th, 2016) 2. The school has this kind of technology. The computer and tele-communicative lessons help a lot. The classrooms are more advanced now. (ST4FC, June 15th, 2016) 3. The school has foreign teachers who are good at IT, social media and websites, for instance. However, the problem is that these things cost money. (ST1SC, June 14th, 2016) 4. The school has website, Line group and Facebook. In fact, we opened the FB account a long time ago but it needed to be more interesting. We need professionals who can take care of this. (ST2SC, June 14th, 2016) 5. Only 10 % of students are good at IT. The rest of them are good at life skills. However, if they understand the context, then we accompany and advise them to do what needs to be done. We call it magic. Students can finish their assignments in the wink of an eye. (ST3FC, June 14th, 2016)
<p>Technology and media usage: excerpts from case study II</p>	<ol style="list-style-type: none"> 1. We donated 30,000bht for the school and went there to build a classroom building. We follow their ongoing activities by the social media. I think they go to the right way. (TY7O, 23th May, 2016) 2. They are modern teachers. They present their activities via social media. Therefore, the people far away know what the school is doing, what the school needs. (TY7O, 23th May, 2016) 3. It helps a lot. The school has been developed so far due to the social media. (TY1SC, 17th May, 2016) 4. There are both advantages and disadvantages. (TY3FC, 17th May, 2016) 5. The school has a FB page. If I am absent from the school meetings, I can catch up with news and updates from FB. Sometimes they use this channel to announce the upcoming events and how they need parents to collaborate. (TY2FC, 17th May, 2016)

Table 7.6: Quotations regarding technology and media usage in the case studies.
(cont.)

INDICATOR	QUOTATIONS
Technology and media usage: excerpts from case study III	<ol style="list-style-type: none"> <li>1. We use IT such as websites in promoting campaigns. Many volunteers find us via Google search (TR8PC, 31st May, 2016). <li>2. We have TOT high speed internet. The students use IT a lot. For example, we provide 3-4 classrooms equipped with large screen televisions for distance-learning via satellite. The students can make use of these programs (TR1SC, 31st May, 2016). <li>3. There are free seminars on online marketing and e-commerce for the parents. I think this channel will make our businesses more sustainable (TR4LA, 31st May, 2016). <li>4. I am not good at IT but my kids are. In the past, when they solved a math problems, they used a lot of pieces of paper. But now they just pick up their phone and touch the screen. Anyway, I have to teach them to use these things in a positive way (TR2FC, 31st May, 2016). <li>5. IT is taught at school like computer subjects, but the school does not use this channel much to communicate with the parents. They just spread word of mouth and people acknowledge it. (TR5LA, 31st May, 2016)

Technology and media are used in various ways, such as the internet, television, tablets, email and social media. The use of high technology such as television broadcasting is served from the central policy managed by the Ministry of Education with the collaboration of non-profit organizations, which are available for every school if required. At local level, there is a need for cooperation in preparing hardware such as televisions, microphones, computers and speakers to complete the tasks. For example, the school in case study III was supplied with TOT high speed internet and classrooms equipped with large screen televisions for satellite-based distance-learning (TR1SC, 31st May, 2016). In case study II, computers and tele-communicative lessons help the school a lot. The classrooms are more advanced (ST4FC, June 15th, 2016). However, for some Thai school, it is not easy to afford such materials. Technology is a high-cost investment, which is problematic for many schools (ST1SC, June 14th, 2016) and thus requires co-production from others.

Furthermore, the usage of other media, such as social media and websites, is another factor that influences the implementation and co-

production of ESD. Such facilities should come with knowledge of how to maximize the application of these technologies. Nonetheless, schools still lack technology experts who can improve the application of IT. In many cases, the schools use social media, but their use needs to be developed with professional help (ST2SC, June 14th, 2016). Technology and media usage appear to be very important. In two of the case studies, much of the help and collaboration from outside come from social media, and stakeholders who co-produce the education follow the ongoing activities of the school via social media (TY7O, 23th May, 2016). The schools make use of social media as a tool in promoting their activities. The education service providers do the presentation and keep the co-producers updated via social networks (ST3FC, June 15th, 2016). The role of social media can generate public value through the design and implementation of user-generated services. It is a challenge for the government to undergo a profound transformation of its use of social media in order to fully embrace the reality of participation (Castelnuovo, 2015).

Many respondents think that technology and media usage is both an advantage and a disadvantage, and that they should be used with care. Parents' intervention is necessary. Some agree that technology helps to make life easier, such as solving maths problems using smartphones rather than on paper, but that children need to be taught to use these things in a positive way (TR2FC, 31st May, 2016).

Technology and media help to disseminate knowledge and necessary information to stakeholders. If people learn how to make use of these kinds of technology, they can make the most of them. They need the knowhow to apply it to the provision and co-production of education. Advanced technology is not needed: basic technology with the correct knowhow can help in the co-production of education. Technology and media usage, such as satellite lessons, is very important to education management, especially for schools in remote areas. Furthermore, the Internet provides an alternative channel for buying or selling merchandise, which can make businesses more sustainable (TR4LA, 31st May, 2016). Overall, technology and media usage is useful and favourable to SD. If schools cannot afford such technology, they may need co-production and collaboration from others to

enhance ESD. Non-profit organizations and private sectors are the main co-producers of this type of material.

7.1.2.2.4 Contingency approaches (Leadership and contingency approaches)

The researcher considers that leadership and contingency approaches should be dealt with separately. Leadership should stay in the input phase, while contingency approaches should be in the process phase. The contingency approach means that "the best way to organize depends on the nature of the environment to which the organization relates" (Scott, 1992: 89). Contingency theory has two basic underlying assumptions: firstly, that there is no one best way to organize, and secondly, that not all ways of organizing are equally effective (Galbraith, 1973). During the interviews, the respondents mentioned many times that in the process of implementation and co-production of ESD, leaders apply many situational decisions and plans to solve problems and accomplish activities. One example shows that when a problem arises in society, the school takes the opportunity to embed problem-solving skills to the students. For example, they trained the students to solve the problem of domestic waste by developing a more sustainable approach. The students are the main actors to link home, family, temple, community, local administrators, etc. The school, as well as the temple, can be the centre of the community (ST2SC, June 14th, 2016). For these reasons, the researcher thinks that contingency approaches should be placed in the process phase of the cycle, as they allow and support other indicators such as community engagement, cultural adaptation and technology and media usage with greater flexibility.

7.1.2.3 Output

The goal of a sustainable future and mutual benefits are considered to be in the output phase of the implementation and co-production of ESD. However, in some cases, self-reliance and self-efficiency of the population are not in the input phase but are shifted into the output phase of the cycle. Specifically, if the population is not self-reliant and self-efficient enough, the objective and the expected output will be to improve these characteristics. When the data were analyzed and put

back into graphical form, some non-significant indicators were removed. Then, the three output graphs were combined to compare and contrast the cases to highlight the importance of the output of the cycle:

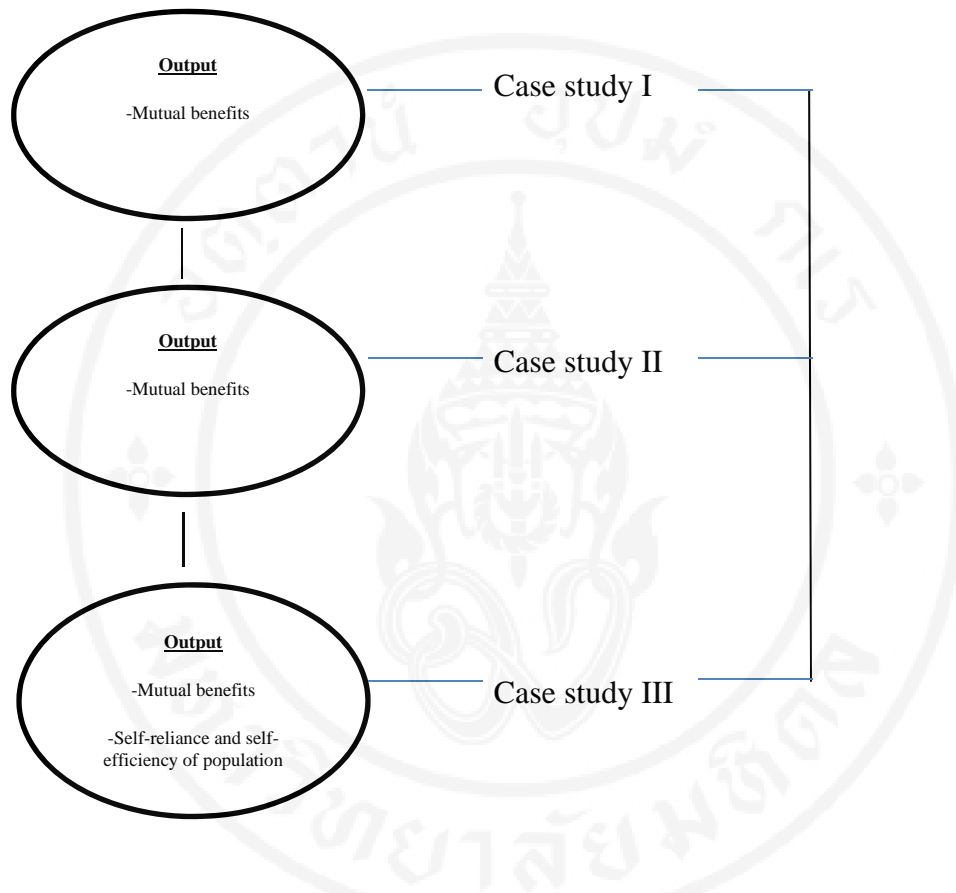


Figure 7.4 The output of the implementation and co-production of ESD from the three case studies.

7.1.2.3.1 Mutual benefits

Mutual benefit is the most significant indicator in the output phase of the cycle. It be concluded that the ESD is culturally relevant, so that input and process can differ depending on the context of different cultures, norms, traditions and settings. However, the output is the same, being based on mutual benefits. The direct and indirect beneficiaries of the implementation of ESD are willing to co-produce the education services.

The meaningful excerpts in the table show that the opinions of the respondents toward mutual benefits are relevant to the implementation and co-production of ESD practices:

Table 7.7 Quotations regarding mutual benefits in the case studies

INDICATORS	QUOTATIONS
Mutual benefits: excerpts from case study I	<p>1. We hire only one foreign teacher: the rest are volunteers. They stay here for a long time. We help them with work permit documentation. We don't give them money but some little things like rice and eggs for their meals. Most of them are okay with this option. Some invite other friends from abroad to come. (ST1SC, June 14th, 2016)</p> <p>2. We arrange many things for the community. First of all, we have opened a shop for community products and we have it registered as a commercial shop, a public commercial shop. Secondly, CSR. You know, here CSR is more than a tax deduction. When people donate some amount of money to the school, it gives them a two-fold return because the school uses the money to hire people in the community to do some work. One part of the benefit comes back to school as well. (ST3FC, June 14th, 2016)</p> <p>3. When the community collaborates with us, they see the mutual benefits and as an indirect result, we have strong networks. For examples, they grow food products and then we buy them for the school lunches. Or we hire the community to organize the coffee break for general meetings. They get money and the school does its jobs. This makes people willing to join us. (ST1SC, June 14th, 2016)</p> <p>4. I agree. If we do things without seeing what we'll get back, it is a waste of time. It's not good. No one wants to do that. (ST7O, June 14th, 2016)</p> <p>5. When the community cooperates to do some activities, they learn from what they practice. They will bring these new lessons into their work. For example, Aka people do not know how to raise fish. When they see and collaborate with the school to complete this lesson, they take it to apply on their land. (ST8O, June 14th, 2016)</p>

Table 7.7 Quotations regarding mutual benefits in the case studies (cont.)

INDICATORS	QUOTATIONS
Mutual benefits: excerpts from case study II	<ol style="list-style-type: none"> 1. Thousands of people would benefit from this school if we did a road show with the purpose of strengthening communities. We intend to raise the example of Bantthayae School to be a model showing that with this type of education, the students – the future population of the nation – are self-reliant. (TY7O, 23rd May, 2016) 2. Parents do not need money from the schools when they co-produce the education. They are happy when they see that their kids have life skills (TY8O, 23rd Sept, 2016) 3. We do not give money to the people who come and give lectures at the school. I think that what they and we receive are friendship and pride. I think they are proud of themselves because they are the teachers and they give lectures about what they are good at. They know those things the best. (TY1SC, 17th May, 2016) 4. We don't get money but we are proud of ourselves because we can help other people: our community, our kids... (TY6CF, 17th May, 2016) 5. I am happy and proud of myself when the school listens to my advice. (TY2FC, 17th May, 2016)
Mutual benefits: excerpts from case study III	<ol style="list-style-type: none"> 1. It's our product, let's say. ...people want to be volunteer, and we see that we can add volunteer program as an AD product We put a margin on it. The school benefits from us and we make profits. (TR8PC, 31st May, 2016) 2. They are happy when they do something with the school. It's a kind of social gathering: they talk and chat. (TR4LA, 31st May, 2016) 3. We learn from the school as well and we are happy. If we just stay at home, we cannot know about the behaviour of our kids at school. The parents feel united with the school. (TR2FC, 31st May, 2016) 4. In cooperative activities, my daughter can save money and share profit. It's a good thing. (TR3FC, 31st May, 2016) 5. It's not the money matter. Everybody in the village needs their kids to have good well-being, good education. People who co-produce the classroom hope that every kid in the community will receive a he good education. The students here are like our nieces or nephews. The rewards are intrinsic. (TR5LA, 31st May, 2016)

The implementation and co-production of ESD policy create mutual benefits among the stakeholders. The results from the three case studies confirm this assumption. The mutual benefits appear to be an outcome of the implementation and co-production of ESD, and are thus placed in the output section. They happen in both intrinsic and extrinsic forms. At the intrinsic reward level, some may feel that they are givers, but at the same time, they are also receivers. The givers receive rewards but not money in the form of. There are several reasons why people co-produce education.

Firstly, people who co-produce education feel value in themselves, as well as satisfaction in themselves, in the quality of education that the children in the community receive and in the society where they live. The co-producers learn from the school as well, and this makes them happy. If they just stay at home, they cannot know how their children behave at school. The parents feel united with the school (TR2FC, 31st May, 2016). People don't get money but they are proud of themselves because they can help the community and its children (TY6CF, 17th May, 2016). Finally, co-production fulfils people's need to be a part of society and to be important, and also fulfils a social need (TR4LA, 31st May, 2016). This means that the co-production can fulfil several of people's needs according to Maslow's theory (1954) (self-esteem, love and friendship).

Meanwhile, extrinsic mutual benefits are also found among the stakeholders. For instance, companies can benefit with tax deductions at the end of the fiscal year. Co-production can also improve companies' reputation in the form of Corporate Social Responsibility (CSR). Moreover, in many cases, the co-production creates money in return. For example, the students can save money and engage in profit-sharing in cooperative activities (TR3FC, 31st May, 2016). Moreover, co-production becomes a business in some cases. As shown in case study III, sending volunteers to co-produce education with the school is a kind of product, which has a margin. The school benefits from the program and the company makes profits (TR8PC, 31st May, 2016). It is a kind of social enterprise.

The basic practice of co-producing ESD can result in reciprocal benefits among co-producers, service providers and service users. In the education service, when families co-produce the education, their children receive a

better education or the type of education that the families want. The quality of the co-producers is also essential. One external stakeholder who helps to disseminate the knowledge and model of his school feels that these ESD practices could be useful to more people throughout the country. In all three cases, mutual benefit was the most frequently mentioned aspect in the interviews. It can be assumed that without mutual benefits, the implementation and co-production of ESD might not happen.

7.1.3 Comparison and contrasting of the results of the three case studies

In order to compare and contrast the results of the three case studies, the final results for the significant indicators are presented in table form, as shown below:

Table 7.8 Comparison of the significant indicators in the three cases (Author's table).

Indicators	Findings in the case studies		
	Case Study 1	Case Study 2	Case Study 3
Input -Self-reliance and self-efficiency of population	Most of the population in this case study work in agriculture. With initial help from the government and other stakeholders such as the Royal Initiatives Doi Tung Project, they have become more self-reliant.	The community and population in the area proved themselves to be self-reliant and self-efficient despite the poverty that they face. They are united and do not wait for service provision from the government, but try to resolve their problems on their own.	The findings showed that the population in this case study is not self-reliant enough. They wait for help or public services from central and local government.

Table 7.8 Comparison of the significant indicators in the three cases (Author's table).
(cont.)

Indicators	Findings in the case studies		
	Case Study 1	Case Study 2	Case Study 3
-Leadership and contingency approaches	<p>The leadership showed its importance to the case study. The case proved that the implementation of ESD or any other policy requires consistency. Therefore, the school leader's vision to complete the mission supports the success of the school in its policy implementation. Moreover, the leadership in each producer and co-producer of the public services themselves are relevant to its success.</p>	<p>In the same way as in the first case study, the vision and dedication of the leader empower the community and the stakeholders to resolve their problems. Gradually, they have become stronger and more self-reliant.</p>	<p>The research found that the sacrifice and dedication of the leader contributed to the success of the education provision of the case study school. Moreover, the leader's vision and the faith that people have in their leader facilitate the co-production of education provision for the school.</p>

Table 7.8 Comparison of the significant indicators in the three cases (Author's table).
(cont.)

Indicators	Findings in the case studies		
	Case Study 1	Case Study 2	Case Study 3
- Interdependence	Interdependence is common in case study 1. The picture of the interdependence among the school, the community and the temple, as well as the Catholic church and the local administrative organizations, is clear in the implementation of any projects. In particular, the people are willing to lend a hand in the projects initiated by the school.	Amidst the difficulties and problems in the area, the interdependence between people and other institutions in the communities helps in relieving the situation. It does well in encouraging the co-production of the school's education provision, as members of the community consider education to be important for their community and for their children.	The school itself is not complete, as it still has many needs that others must fulfil. Therefore, interdependence is a key actor and a starting point for the school to establish co-co-production from others in its education provision.

Table 7.8 Comparison of the significant indicators in the three cases (Author’s table).
(cont.)

Indicators	Findings in the case studies		
	Case Study 1	Case Study 2	Case Study 3
<p>Process</p> <p>- Community engagement</p>	<p>Community engagement is obligatory in the case study due to the ESD approach that they used in their education management. CSA was highly involved with the community. ESD would never have happened without community engagement.</p>	<p>The case study showed the significance of community engagement. It emphasizes the fact that civic participation is greater when public services are inadequate. The scarcity of the budget and personnel in education management at the school made the people more involved in co-production.</p>	<p>The case study showed less community engagement than the other case studies. Because supplies of materials, budgets and personnel from other institutions were provided to the school, the community was less interested in participating in the co-production of education. However, the researcher still observed some co-production from families and people with local wisdom who gave lectures on specific subjects.</p>

Table 7.8 Comparison of the significant indicators in the three cases (Author's table).
(cont.)

Indicators	Findings in the case studies		
	Case Study 1	Case Study 2	Case Study 3
- Cultural adaption	Cultural adaption was not as outstanding as in the other two cases but it was not ignored in this case study. In particular, local wisdom on herbs and herbal products, for example, was added to the curricula to enable the students to practices and conserve the local traditions.	The cultural adaptation in case study 2 is evident because of the poverty that hinders the students' ability to pursue higher education. After finishing school, most of the students go into professions that are available in the neighborhood or in the nearby cities. For these reasons, life skills that suit of their lives and future professions are essential for the students.	Due to the diversity of the culture in the case study area, cultural adaption is necessary to the school. The school has to provide a wide range of extra-curricular classes that are beneficial to the students. This includes classroom management to facilitate both Buddhist and Muslin students to fulfill their religious commitments.

Table 7.8 Comparison of the significant indicators in the three cases (Author's table).
(cont.)

Indicators	Findings in the case studies		
	Case Study 1	Case Study 2	Case Study 3
- Technology and Media Usage	The case study school focused on basic technology such as computers and the internet. Then they tried to make the most of them to provide better education to the students through the use of technology.	The use of social media was more outstanding in case study II than in the other two cases. It was used to disseminate the school's activities to the public, and the school gained more co-production from external agencies as a result.	The use of the technology was essential for this school in a remote area because it compensates what the school lacked. However, it was a high-cost investment and needed good planning. Co-production was necessary in this matter.
- Contingency approaches (Leadership and contingency approaches)	The leaders used many situational decisions. When a problem arises in society, the school takes the opportunity to instil problem-solving skills in the students.	The contingency approach supported the other indicators well. The leader decided what to do or not to.	Situational decisions were important to the implementation of the educational policies and projects.

Table 7.8 Comparison of the significant indicators in the three cases (Author's table).
(cont.)

Indicators	Findings in the case studies		
	Case Study 1	Case Study 2	Case Study 3
Output - Mutual benefits	It is a basic but common factor in the co-production of ESD. The population of the research highlighted the significance of the mutual benefits.	As in case study I, mutual benefit it is a basic but common factor in the co-production of ESD. The population of the research highlighted the significance of the mutual benefits.	As in case study I and II, mutual benefit is a basic but common factor in the co-production of ESD. The population of the research highlighted the significance of the mutual benefits.
- Self-reliance and self-efficiency of population	None	None	It is the goal or objective of education in this case study to make people more self-reliant. They hope people can live independently, without waiting for help from the government or others.

From the table above, comparisons can be drawn to conclude that the input and output of the case studies are not easy to control, as they are greatly dependent on the local context of each setting. Therefore, it is important focus on the more controllable factors: that is, the indicators in the process portion. The results regarding the indicators in the process in these case studies have no significant discrepancies and have the same focus. They could be used to develop a practicable model in the future.

7.1.4 Conclusion

From the discussion in the previous section, it can be concluded according to the first objective that the co-production of education in Thailand can happen at both the individual level and at the more collective level, in keeping with the suggestion by Nesbit (2002). Co-production at the individual level happens when the direct beneficiary participates in service delivery, while co-production at a more collective level takes place when one's individual attempts are not enough to drive the desired change (Ibid, 2002). The research finds that in Thailand, the co-production of ESD happens at both levels. The individual level is the co-production from the students themselves. Consequently, the collective group of people who co-produce ESD starts from the community, the non-profit network and organizations, the private sector and volunteers. Most public schools in Thailand apply the Sufficiency Economy of King Rama IX in their curricula according to the Tenth National Development Plan (2006-2011). This theory is applied in the form of lessons that students learn and practice to achieve sustainability. According to ACCU, ESD-oriented activities take an approach that envisions a sustainable society in which human beings can coexist with nature. This is not something new but something that already exists (ACCU, 2007). The two concepts are closely interwoven in the Thai context of the ESD implementation. Some of the case studies show that they use both concepts to implement the education to achieve SD. The school administration takes the responsibility of providing education services to citizen and encouraging civic co-production. However, the results show that the levels of co-production in each case study are different depending on local needs, which are determined by the quality of service provision from local government. At the collective level, communities seem to co-produce less when their schools' education provision is satisfactory. Finally, it can be concluded that the co-producers of ESD in the case studies are the co-deliverers of professionally designed services.

For the second objective, the research sought to examine the factors that form the cycle of implementing and co-producing ESD, namely the input, process and output of ESD and the co-production of ESD in Thailand within the context of the three case studies. The researcher has tried to develop a model of this type of co-production. The ways in which these different collective groups co-produce the ESD

to the schools affect the models of implementation and co-production of ESD and identify which indicators are valid in the case studies. The researcher assessed the case studies against the twelve contributing factors through interviews and non-participant observation. When the results were obtained and analysed, the most significant indicators were put into graphical form and classified as input, process and output, although this classification depends on the context of each setting. The results after the elimination of non-significant factors revealed that the most significant factors in the input phase are self-reliance and self-efficiency of the population, interdependence, and leadership and contingency approaches. The most significant indicators in the process phase are cultural adaptation, community engagement, technology and media usage, and contingency approaches (a part of the leadership and contingency approach). Finally, the primary outputs of the three cases are mutual benefits; meanwhile, case study III appears to have self-reliance and self-efficiency of the population as an output. In conclusion, ESD should focus on the process phase because it involves controllable factors, while the indicators in the input section are not easy to control. People can apply the factors in the process sector as a basis for the future education policy, which will encourage SD and sustainability in Thailand.

To summarize, co-production is one of several mechanisms that can be applied to add the influence of citizens to the services that are delivered to them (Pestoff & Brandsen, 2009). From the three case studies, the implementation and co-production of ESD can be summarized as follows:

Firstly, the better the service provision is, the less co-production intervenes. It confirms Parrado's (2013) statement that the better the performance in service provision from local or state governments, the less willing people are to co-produce these services. Secondly, the better the inputs, the more co-production happens. This is because the research demonstrates that the implementation and co-production of ESD has to include all inputs – that is, self-reliance and self-efficiency of the population, the leadership and contingency approach and interdependence – to make the co-production at the community level more efficient. Thirdly, ESD implementation and co-production have to be focused more at the process stage. IT and media usage are highly significant. This aspect should be studied and developed because it could be a solution for sustainable education. Furthermore, the indicators in

the process section – cultural adaptation, community engagement, and technology and media usage – should be the main focus in developing any future education policy nationwide to achieve sustainable development. Fourthly, ESD is culturally relevant, so the input and process can vary with context. However, the primary output is the same, in the form of mutual benefits. The citizens with the greatest need of service are likely to show the most interest in co-production (Jakobsen, 2012). Moreover, the beneficiaries of ESD will be the most willing to co-produce (Nesbit, 2002). Fifthly, the meanings of “Sustainability” and ESD are still contested and depend on local interpretations. For this reason, it is difficult to develop an achievement indicator. Sixthly, the results of sustainability appear in the long run. The practices should thus be undertaken continuously, without stopping in the middle. Finally, co-production is necessary at every level: parents, families, community, local administration and government. The level of co-production affects the model of implantation and co-production of ESD.

7.1.5 Research Limitations

Although the research has achieved its aims, there are unavoidable limitations. First, the three case studies may not represent all public schools in Thailand but it is a reflection of our basic education in the rural area. The cases selected according to the research criteria can only portray a picture of schools that have good practice in the implementation of ESD and the co-production of education services from other stakeholders. Finally, the data collection was based upon the findings from the literature review: that is, it aimed to check the twelve indicators with the case studies. The research focused on the synthesis of the main ideas of SD, ESD and co-production. Therefore, other findings that were not related to the twelve indicators were not presented in this research.

7.2 Policy suggestions and recommendations for future research

7.2.1 Policy suggestions

The research aimed to study the implementation and co-production of ESD to make a contribution to the Office of the Basic Education Commission (OBEC), which can adopt the findings of this study when developing future policies. The final indicators tested with the case studies should be taken into an account when developing policies or programs. In particular, the indicators in the process portion section – cultural adaptation, community engagement, and technology and media usage – should be the main focus of national and local policy implementation. The further suggestion is that they should consider integrating ESD as a part of the Basic Education core curriculum in the future either as a separate subject or student learning activities. Finally, they should encourage the co-production of education as a norm in Thai education provision.

7.2.2 Recommendations

For further studies, the researcher has developed the following suggestions for the implementation and co-production of ESD in Thailand. First of all, ESD does not lie only in basic education: other institutions, such as life-long learning centres or higher education institutions, can also apply the implications of ESD. Future research could undertake case studies in other sectors of education. Secondly, the twelve indicators contributing to ESD are very useful as a framework for studying the implementation and co-production of ESD. However, each of these indicators should be refined or researched to develop evaluation criteria for their achievement. Especially regarding the contributing factors in the process of implementation and co-production of ESD, future research could develop implementation models that will be able to bring these concepts into practice. Finally, the definition of “sustainability” is still a problem. Future research could refine and interpret the meaning of sustainability for a specific context, such as the community level in Thailand, to develop a more specific framework.

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