การออกแบบกระบวนการฝึกอบรมสำหรับโครงการเสริมสร้างผู้ประกอบการใหม่

นายธีรศักดิ์ ก่อเกียรติวนิช

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาวิศวกรรมศาสตรมหาบัณฑิต
สาขาวิชาการจัดการทางวิศวกรรม ศูนย์ระดับภูมิภาคทางวิศวกรรมระบบการผลิต
คณะวิศวกรรมศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย
ปีการศึกษา 2554

PROCESS DESIGN FOR NEW ENTREPRENEUR CREATION PROGRAM

Mr. Teerasak Korkiatiwanich

A Thesis Submitted in Partial Fulfillment of the Requirements

for the Degree of Master of Engineering Program in Engineering Management

The Regional Centre for Manufacturing Systems Engineering

Faculty of Engineering

Chulalongkorn University

Academic Year 2011

Thesis Title	PROCESS DESIGN FOR NEW ENTREPRENEUR CREATION PROGRAM
By	Mr. Teerasak Korkiatiwanich
Field of Study	Engineering Management
Thesis Advisor	Associate Professor Suthas Ratanakuakangwan

Accepted by the Faculty of Engineering, Chulalongkorn University in Partial Fulfillment of the Requirements for the Master's Degree

…….. Dean of the Faculty of Engineering

(Associate Professor Boonsom Lerdhirunwong, Dr. Ing.)

THESIS COMMITTEE

…….. Chairman

(Professor Sirichan Thongprasert, Ph.D.)

…….. Thesis Advisor

(Associate Professor Suthas Ratanakuakangwan)

…….. Examiner

(Assistant Professor Paveena Chaovalitwongse, Ph.D.)

…….. External Examiner

(Associate Professor James Wallbank, D. Eng.)

ธีรศักดิ์ ก่อเกียรติวนิช: การออกแบบกระบวนการฝึกอบรบสำหรับโครงการเสริมสร้างผู้ประกอบการใหม่ (Process Design for New Entrepreneur Creation Program). อ. ที่ปรึกษาวิทยานิพนธ์หลัก : รศ. สุทัศน์ รัตนเกื้อกังวาน , 127 หน้า.

งานวิจัยนี้มีวัตถุประสงค์เพื่อที่จะศึกษากระบวนการออกแบบมาตรฐาน เพื่อการออกแบบหลักสูตรการอบรบที่มีประสิทธิภาพของโครงการเสริมสร้างผู้ประกอบการใหม่ การริเริ่มงานวิจัยดังกล่าวจำเป็นที่จะต้องค้นคว้าหาข้อมูลสนับสนุนเพิ่มเติม วัตถุประสงค์หลักของงานวิจัยนี้คือ เพื่อเพิ่มประสิทธิภาพของโครงการเสริมสร้างผู้ประกอบการใหม่ ของหน่วยปฏิบัติการวิจัยการบริหารอุตสาหกรรมและเทคโนโลยี คณะวิศวกรรมศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย โดยการใช้กระบวนการออกแบบมาตรฐานในการจัดหลักสูตรการอบรม โดยคำนึงถึงวัตถุประสงค์ของโครงการเสริมสร้างผู้ประกอบการใหม่ร่วมกับความต้องการของผู้เข้ารับการอบรบ

กระบวนการออกแบบมาตรฐานประกอบไปด้วยการวิเคราะห์ การออกแบบ การพัฒนา และการประเมินผล ในการวิเคราะห์ผลหลักสูตรการอบรมปัจจุบัน ประกอบด้วยการเก็บข้อมูล โดยผู้จัดทำวิทยานิพนธ์จะเข้าร่วมโครงการเสริมสร้างผู้ประกอบการใหม่ การเก็บข้อมูลโดยใช้การสัมภาษณ์ และทำแบบสอบถาม จากนั้นวิเคราะห์และแปลความหมายของข้อมูลโดยการนำ Affinity diagram การวิเคราะห์ทางสถิติ การบริหารด้วยเป้าหมาย (MBO) และ QFD มาใช้เพื่อหาปัจจัยที่มีความสำคัญ และแนวคิดพัฒนาปรับปรุง เพื่อค้าหาลักษณะเฉพาะที่สำคัญของหลักสูตรการอบรม จากนั้นออกแบบหลักสูตรการอบรมใหม่ตามแนวคิดพัฒนาปรับปรุงและลักษณะเฉพาะที่สำคัญของหลักสูตร และคัดเลือกแนวคิดที่ดีที่สุดด้วยการใช้ Evaluation Matrix หลังจากเสร็จสิ้นขั้นตอนการออกแบบหลักสูตรการอบรม หลักสูตรการอบรมใหม่จะถูกประเมินประสิทธิภาพโดยผู้เชี่ยวชาญ

ผู้เชี่ยวชาญได้ประเมินหลักสูตรใหม่ว่ามีประโยชน์มากและสามารถนำมาปฏิบัติได้จริง และจะนำเสนอหลักสูตรใหม่ในที่ประชุมระหว่างคณะทำงานในโครงการเสริมสร้างผู้ประกอบการใหม่ของหน่อยปฏิบัติการวิจัยการบริหารอุตสาหกรรมและเทคโนโลยี คณะวิศวกรรมศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย กับคณะทำงานในโครงการเสริมสร้างผู้ประกอบการใหม่ของกรมส่งเสริมอุตสาหกรรม เพื่อพิจารณาเป็นหลักสูตรการอบรบในปีงบประมาณถัดไป ในทัศนคติของผู้เชี่ยวชาญ ได้รับรองว่ากระบวนการออกแบบมาตรฐาน ได้พัฒนาประสิทธิภาพของโครงการณ์เสริมสร้างผู้ประกอบการใหม่

ภาควิชา ศูนย์ระดับภูมิภาคทางวิศวกรรมระบบการผลิต ลายมือชื่อนิสิต.....

สาขาวิชา การจัดการทางวิศวกรรม ลายมือชื่ออ.ที่ปรึกษาวิทยานิพนธ์หลัก.....

ปีการศึกษา 2554

5171607121: MAJOR ENGINEERING MANAGEMENT

KEYWORDS: PROCESS DESIGN

TEERASAK KORKIATIWANICH: PROCESS DESIGN FOR NEW ENTREPRENEUR CREATION PROGRAM. ADVISOR: ASSOC. PROF. SUTHAS RATANAKUAKANGWAN, 127 pp.

The purpose of this research is to study the standard instructional design process to design the effective course module for NEC program. The extended research on its characteristics will be necessary. The objectives of this research are to increase the performance of NEC program taken place in Research Unit for Industrial Management and Technology, Chulalongkorn University (IMTCU) by applying the standard instructional design process to reconstruct the course modules in order to measure against the NEC program objectives and participant's requirements.

The standard instructional design process consisted of the analysis, design, development and evaluation. The analysis of current NEC program consisted of the data collection by participative observation, pilot study and questionnaires, the data analysis and interpretation is done by using affinity diagram, statistic test, MBO and QFD to determine the influence factors and deploy the relationship between influence factors and improvement ideas in order to find the significant course module characteristics. The new course module design and development is done by generating the concept along the module characteristics and using the evaluation matrix to select the best concept. Then develop the suggested course module along the selected concept. After finish the course module design, it will be evaluated by project leader and experts from department of Industrial Promotion Center in order to verify the suggested course module performance.

The expert evaluation and recommend explained that the standard instructional design process for NEC program seem to be more useful and possible in practice, and the suggested course module will be considering for the next year NEC program in the discussion meeting between NEC project team (IMTCU) and the Department of Industrial Promotion Center. In the expert's viewpoint, it is verified that the standard instructional design process has improved the result of the NEC Program performance.

Department: The Regional Centre for Manufacturing Systems Engineering Student's Signature……..

Field of Study: Engineering Management Advisor's Signature.....

Academic Year: 2011

ACKNOWLEDGEMENTS

I would like to express sincere appreciation to Associate Professor Suthas Ratanakuakangwan, the thesis advisor, for his support and his patience which has helped to complete this thesis. His guidance and comments has helped the researcher to understand and be motivated to finish this research. Grateful thanks also are express to Professor Sirichan Thongprasert, the chairman, and Assistant Professor Paveena Chaovalitwongse, the examiner of the thesis, for their constructive comments.

I would like to show my greatest gratitude for Mr. Dhunyanon Ratanakuakangwan, the project leader, Ms. Noppawan Rakfuekfon, the project coordinator and all the members of New Entrepreneur Creation Program at IMTCU, for their cooperation and help that they have given to complete this thesis. Without them, this thesis would not have been possible.

Eventually, I would like to thank his beloved family, especially his parent's patience and guidance throughout this thesis. A lot of appreciation is expressed to my dearest friends who have given support when ever needed. I would like to thank a special person that has help, supported, and understand all the problems that I had come across during this time no matter how difficult it might be. Thank you to everyone that was involved in any step of the thesis, without them, it would not have been possible to complete.

CONTENTS

LIST OF TABLES

Page

Page

LIST OF FIGURES

Page

Page

CHAPTER I

INTRODUCTION

In every business, Automotive, Electronic, Energy or etc., the competition become more and more globalize. The Company which has less competitive are eliminated, the emerging of new company especially small and medium enterprises (SMEs) are much higher. SMEs are a very significant part of the national economies in every country. They play a significant role in presentation of most new product to marketplace. The small size of these enterprises means that in order to preserve their competitive advantage in an increasingly cruel international market, they need to be receptive more than other sectors to the latest approaches in product design, development and manufacturing (Cawood et al., 2004). SME are engines of enterprise and national prosperity (Millward et al., 2006), if the entire national economy is demonstrated as a pyramid, then SME industries are the lower layer on the pyramid.

SMEs are a very important element of national economies throughout the world. They play a significant role in presentation of most new product to marketplace. The small size of these enterprises means that in order to preserve their competitive advantage in an increasingly cruel international market, they need to be receptive more than other sectors to the latest approaches in product design, development and manufacturing (Cawood et al., 2004). SME are engines of enterprise and national prosperity (Millward et al., 2006)

In the current climate, Thailand has been affected by global economic conditions. These affect the operations of SMEs business which led to problems of out of business. As a result of economic crisis, the unemployment rate and work termination rate are increasing which directly impact to new business in startup period; they cannot

survive in this kind of situation. In order to deal with this kind of situation, Government has policy to promote and develop the potential SMEs and new entrepreneur; this is a key strategy in developing the country's economy in the long term. To support and develop SMEs business, their performance is the concerned subject as show below;

- The majority of SMEs lack knowledge, management tools, established practices and resources.

- Business development in many SMEs becomes an experiment in survival with large uncontrollable losses and non-efficiencies mostly unknown to management as well as with various painful mistakes caused by incorrect assumptions and lack of basic information.

- Most of the enterprises lack external support in addressing these issues.

- With the coming era of e-business, there is an increasing need for high qualifications of the personnel and learning/adapting of innovations, SME management faces a steadily increasing gap between the feasible rate of their own progress compared to the major international producers and national corporations having the resources to meet the world of change.

SMEs performance as have been described, mostly proceed under the condition of past social characteristic, because people who are highly educated and professionals are often focused to be company employment staff or employees, while those with not highly education often do choose an independent career which is usually not have enough basic knowledge to manage. Therefore, the key strategy to promote SMEs development is focused on inviting those who have good education background, knowledge and experiences which can step up to be entrepreneur in order to improve capacity enough to complete under the modern system of free trade business environment.

1.1 Background of the Research

NEC program is a New Entrepreneurs Creation program provided by the cooperation of Research Unit for Industrial Management and Technology (IMT), Chulalongkorn University and the Department of Industrial Promotion, Ministry of Industry Thailand.

This program is designed to response the government's policy to promote and develop small and medium enterprises (SMEs) in order to rehabilitate and develop Thailand economic in the long term. By creating new entrepreneur and provide support to increase efficiency of existing entrepreneur which have the potential to survive, both new and existing can be held and progress in order to establish the continuous successful business operation to be a source of employment and generating income to country.

The government policy from Department of Industrial Promotion was assigned to the project since year 2002 and operates till a present (Program cooperated with Chulalongkorn University since year 2006, training new entrepreneur in a total of 13 groups, 2 groups in year 2006, 4 groups in year 2007, and 3 groups in year 2008 and 4 groups in year 2009.). NEC project has the following objectives;

- To support and provide training to new graduate students, unemployment and potential employees in order to increase opportunities to create their own business.
- To drive the new enterprise to country
- To increase strength to early SMEs business (the first 3 years) to survive and maintain employment status.

- To support and provide training to the heir of family business to sustain their capability, employment and increase opportunities to expand in the future.

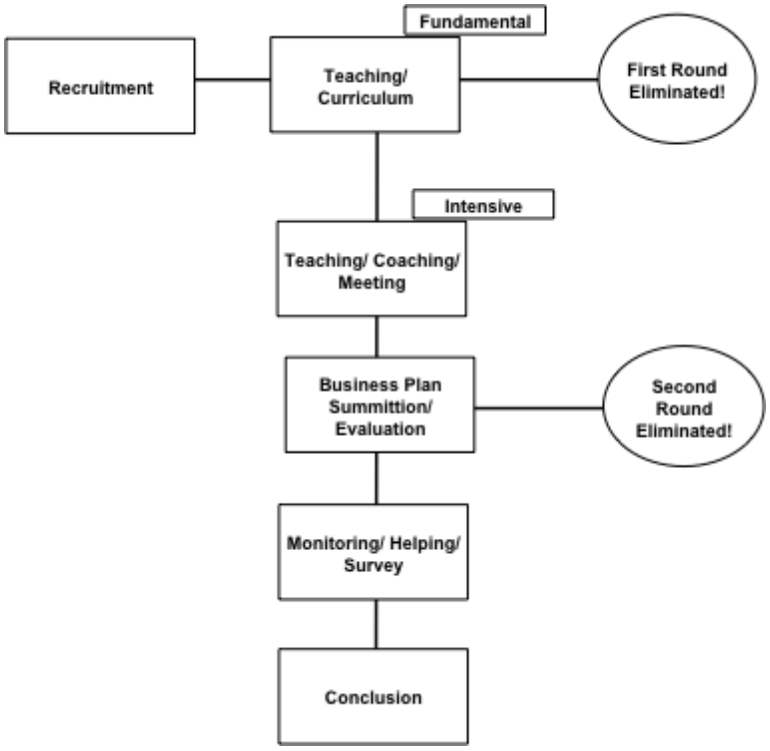

Figure 1-1: NEC Training Process year 2010, Modified by Researcher

With experience of creating new entrepreneur in such a long time found that the important step in the operation is participant's selection. The program will be selected those who have intentions, and potential to be entrepreneur in order to decrease the failure rate during the process of training and creating new entrepreneur. That those who qualified will be brought into the stage of business development ideas and training in basic business management courses to develop concepts and create individual investment plans.

Then those participants who passed through the basic business management course will be filtered into the process of developing entrepreneurial skills. It will be knowledge and technical advice from experts and experienced in business. In addition, the projects also provide continuous support services through various

activities. In order to successfully establish new business, increase market opportunities to expand business activities in products and services, provide coordination to source of capital investment and network between existing and new entrepreneurs.

1.2 Statement of Problem

Even though the impressive range of government sponsored SME initiatives, there is a lack of reliable information on their efficiency. Because most of NEC programs are often unable to set targets and measure results of interventions. Recently, the result of NEC project have been measured by the indicator in number of successful business plan, however with the dynamic atmosphere of NEC program together with fast growing business world, only the key performance indicator such as number of business plan summit is not enough to verify the result of the project.

There are many projects from government concerning skill training which also face the same problem as NEC project. Even though their skill training are quite straight forward to the can do real work indicator which require men skill training as the real work. Therefore they need to provide more example in real working experience and sample in order to guarantee this indicator they also have a test concerning to each skill they obtain in order to guarantee the successfulness of the project.

NEC is also one of the government projects which require the good indicator. However management skill and entrepreneur skill are far more complicate than the work skill. We don't have an effective test to guarantee their successfulness because in the real world the entrepreneur will face so many factors, it somehow up to the market trend, government policy. Furthermore, in order to measure the project performance, the processes need to be stabilized. However, regarding to the teaching method, management and processes have been modified every year, there are still no standard yet.

In additional, not only the indicator of NEC has failed to measure the result of the project, the project itself also fails to deliver customer satisfaction. With the

present process of training, there is no guarantee for the result of the program. There still lack of information concerning the research of significant information and method which the new entrepreneurs need in order to success in creating or expanding their SME business. Therefore the first most important problem at NEC now is the effective NEC process to ensure the customer satisfaction (Successfulness of new entrepreneurs and government policy).

According to past experience of creating new entrepreneur, NEC found the three important steps in measuring the program performance as listed below;

- Input: Participant attribute

  Participants selection process, the program will be selected those who have intentions, and potential to be entrepreneur in order to decrease the failure rate during the process of training and creating new entrepreneur.

- Process: Business and technical training

  Course structure (ex. basic business management, marketing, accounting, and etc.) and supported activities (such as coaching, group work and etc.)

- Output: Knowledge of successful participant

  Compare the successful participants with KPI in order to verify the assumption of hypothesis test.

The statement of problem of the process design for NEC project is listed for as an initiation of a thesis to design the standard training process for NEC program.

This thesis will assure that the entrepreneur will obtain the proper training concerning the case studies, trend analysis, marketing, and government policy. This project also provide continuous coaching and advising in order to establish the

entrepreneur network to enhanced business relationship not only for the project held out at Chulalongkorn University but also through the whole network of NEC Thailand.

1.3 Objective of Thesis

The objective of this research is to design the standard instructional design process for NEC Project

1.4 Scope of Thesis

This thesis on the Process Design for NEC project will be research and written under the following scopes:

- Study based on NEC project at Energy Research Institute, Chulalongkorn University.
- Analysis based on data collection of participants in year 2010, previous information, and data from other NEC project run by other institutes.

This thesis will exclude:

- Resource management, in term of financial, manpower and scheduling management

To conclude the scope of this thesis, the thesis will be concentrating on the efficacy and effectiveness of the program in terms of input, process and the output, however the thesis will exclude the efficiency of the program due to the difficulty of access information and thesis time schedule.

1.5 Expected Benefits

From the result that the thesis will generate the standard process for NEC project to set the standard process in order to satisfy the targets and evaluate the result

of the program in order to improve the program performance for next academic year in terms of recruitment, course structure, and support activities.

1.6 Methodology

The research procedure of the thesis about process design will be following these steps, which are:

1. Literature Review

- Study the literature that includes the concept of process design in the aspects of entrepreneurship training, data surveys, QFD and hypothesis test
- Study Tools, Techniques, Models and Frameworks of process design that can be applied to the total project.

2. Process study and information gathering

- Study process of NEC Project training procedures, recruiting, coaching, group working and business plan processing within the project.
- Be the observer in the 2010 program.
- Gather detailed information about influenced factors within scope of thesis by pilot study and questionnaires in course 2010.
- Gather detailed information of the successful entrepreneur from the previous NEC programs.

3. Analysis and interpretation of data

- Phase I - Categorize and structure influenced factors

Categorize and identify the influenced factors, Test hypothesis of influenced factors compared between successful entrepreneur and unsuccessful

entrepreneur, then use affinity diagram to structure data from pilot study and questionnaires.

- Phase II - Establish the absolute importance of factors

  Apply the MBO approach with the affinity diagram, and then use QFD to translate the data into technical specification of process.

- Phase III – Comparison

  Compare the data in year 2010 with previous data

4. Concept generation and selection.

- Several concepts must be developed regarding to the current SME market situation and select the best concept.

5. Design development

- Develop the process along our concept.

6. Evaluation and verification

- Evaluate and verify the process by experts in order to guarantee the standard process

7. Summary

- Summary and conclusion

- Thesis examination

CHAPTER II

LITERATURE REVIEW

The literature review of this thesis proposal will be covering the following aspects.

2.1 Academic Resources and Information Sources

2.2 Tools for using in Research

2.1 Academic Resources and Information Sources

In this section, some of the relating literature published about the Entrepreneur Learning and process design will be reviewed for guidance. After reviewing several literatures, it is found that there is many approaches concerning these issues.

2.1.1 Entrepreneur Learning

A broad definition of entrepreneurship education by Alain Fayolle (2009): “All activities aiming to foster entrepreneurial mindsets, attitudes and skills and covering a range of aspects such as idea generation, start-up, growth and innovation”

2.1.2 Curriculum and Course Development

The structure of the course is a model developed by Shane (2003), showing his understanding of the entrepreneurial process (Figure 2-1). The objective of Entrepreneur training course is not designed to prepare the participants to start their own business after they graduate. The emphasis is on entrepreneurial behavior that students will be favorably disposed towards entrepreneurship.

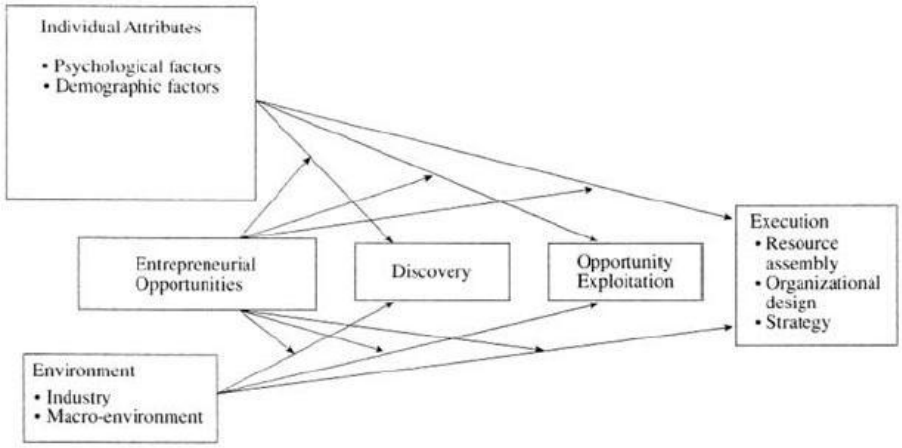

Figure 2-1: A Model of the Entrepreneurial Process, Source: Shane (2003)

The background for the pedagogical process is primarily Kolb's learning cycle (see Figure 2-2).

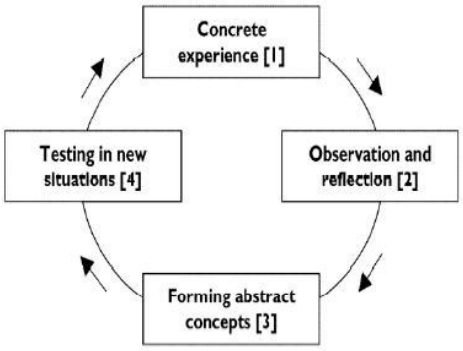

Figure 2-2: Kolb's Learning Cycle, Source: Kolb (1984)

According to Kolb (1984) the learning cycles illustrated times in order to fully understand the general principles. Secondly, it is more than a cycle, because you continually progress into a more profound discerning of the problem dealt with – as opposed to running in circles. Thus, learning to learn seems an important aspect in entrepreneurship since an entrepreneur frequently deals with entirely new business concepts and therefore cannot always seek advice or guidance in his network. Hence, it is necessary to experiment on your own; and it is far from certain that your initial, immediate understanding of the situation and the ensuing proposal for a solution will be accurate. You develop experience, and you learn to learn.

2.1.3 Learning Styles

In addition to recommending a cyclic experience-based learning process, the model can be expanded to encompass a representation of the way different people adopt different learning styles.

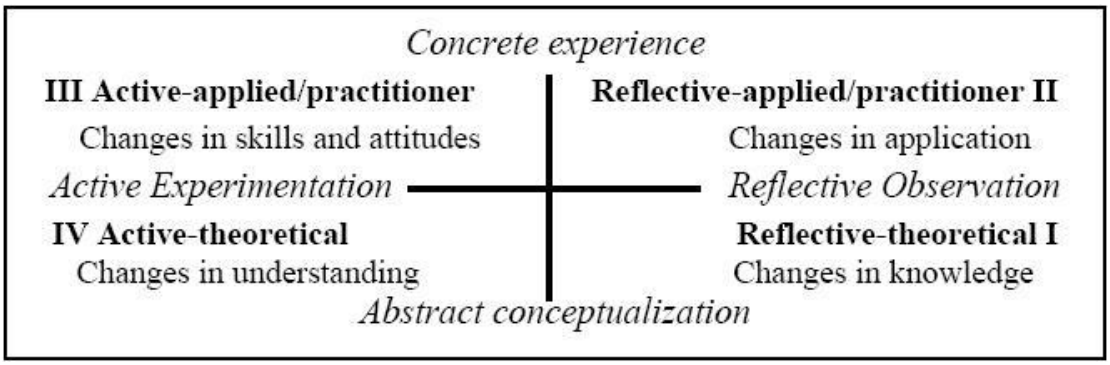

Figure 2-3: Conceptual Grid of Learning Styles, Source: Van Der Sijde (2008)

The quadrants of the cycle illustrate the four learning styles: concrete experience, reflective observation, abstract conceptualization and active experimentation. The 'reflective theorist' will change the student's knowledge of the field: they acquire the knowledge material and seek to conform to what has been learned. The learning material is adopted like a manual for the individual's activities. By applying the next learning style, 'the reflective practitioner', the learner obtains changes in the way of performing an action. This is about guidelines and advice yielding experience during a sequence of actions. The third learning style is 'the active practitioner'.

According to this division, the learner will undergo a change in skills and in his attitude towards entrepreneurship: he adapts. Finally, there is the fourth learning style, 'the active theorist'. During the learning process the learner explicates or changes his perception of the phenomenon. He is the one who gathers the threads towards an understanding of what he is involved in. If we investigate how this division of learning styles fits in with entrepreneurship and entrepreneurs, Garavan and O'Cinneide (1994) refer to a series of studies showing that entrepreneurs prefer one of the active learning styles. Although, they say, practice shows that the teaching and training situation that

potential entrepreneurs are most frequently exposed to is ‘the reflective theorist’. This traditional teaching method is focused on developing the students’ conceptual terminology, and the exam will be a matter of an ability to repeat these concepts. Learning participation is solely reflective (non-activating).

It has never been the intention to design the course and process to fit standing of where you are, and where you would like to be heading. Learning styles are not based on an outside-in understanding, but a concept associated usually with an individual and the way they learn. If you nevertheless try to place the course described somewhere in the model, it will be obvious that the course matches the ‘conceptualization part’ better than the ‘application part’. Even if it has been the intention to develop ‘changes in skills and attitudes’, the model would probably say that the course is closer to ‘changes in understanding’.

2.1.4 Key Performance Indicators

The term KPI has become one of the most over-used and little understood terms in business development and management. In theory it provides a series of measures against which internal managers and external investors can judge the business and how it is likely to perform over the medium and long term. Regrettably it has become confused with metrics – if we can measure it, it is a KPI. Against the growing background of noise created by a welter of such KPI concepts, the true value of the core KPI becomes lost.

The KPI when properly developed should be provided all staff with clear goals and objectives, coupled with an understanding of how they relate to the overall success of the organization. Published internally and continually referred to, they will also strengthen shared values and create common goals.

2.1.5 KPI Components

Only Key when it is of fundamental importance in gaining competitive advantage and is a make or break component in the success or failure of the enterprise. For example, the level of labor turnover is an important operating ratio, but rarely one that is a make or break element in the success and failure of the organization. Many are able to operate on well below benchmark levels and still return satisfactory or above satisfactory results.

Only relating to Performance when it can be clearly measured, quantified and easily influenced by the organization. For example, weather influences many tourist related operations – but the organization cannot influence the weather. Sales growth may be an important performance criteria – but targets must be set that can be measured.

Only an Indicator if it provides leading information on future performance. A considerable amount of data within the organization only has value for historical purposes – for example debtor and creditor length. By contrast rates of new product development provide excellent leading edge information.

Obviously KPI's cannot operate in a vacuum. One cannot establish a KPI without a clear understanding of what is possible – so we have to be able to set upper and lower limits of the KPI in reference to the market and how the competition is performing (or in the absence of competition, a comparable measurement from a number of similar organizations). This means that an understanding of benchmarks is essential to make KPI's useful (and specific to the organization), as they put the level of current performance in context – both for start ups and established enterprises – though they are more important for the latter. Benchmarks also help in checking what other successful organizations see as crucial in building and maintaining competitive advantage.

2.2 Tool for using in the Research

Tools that were chosen in KPI Identification for NEC project are data collection tools (questionnaire, pilot study and interview), Affinity diagram, and QFD and Statistic test.

2.2.1 Data Collection Tools

The purpose of collecting the voice of the customer is to obtain a set of customer phrase representing the customer's wants or needs that can be used in developing or improving the product. There are several of methods of gathering the voice of the customer, all of them aimed to asking the customer to talk about his or her needs for the product or service of the type being planned.

Questionnaire

Questionnaire is a method of data collection that can be used with paper-based questionnaires that have been administered in face-to-face interviews, mail surveys or surveys completed by an interviewer over the telephone.

The questionnaire should be open-ended in order to allow customers to freely express ideas about their needs concerning the products. There are two kinds of the questions.

Close-Ended Questions

These are questions that include all the alternative answers the Respondents are expected to give. This ensures that all their answers fall within a pre-defined pattern which simplifies the process of answering the questionnaire because the respondent will only need to tick the correct alternative and thereby save time

Those advantages are accompanied with the disadvantage of restricting the scope of the Respondents' feelings or reaction to a pre-determined set of alternatives. It is very necessary to ensure that all the alternatives for every question are

exclusive. That is, none of the answers or responses should have two or more alternatives to which it can belong.

It is very necessary to ensure that all the alternatives for every question are exclusive. That is, none of the answers or responses should have two or more alternatives to which it can belong.

Open-Ended Questions

These are questions that give the Respondents ample opportunities to respond in their varied ways to tell you what they think about the product that is the subject of the dependent variable. You will categorize according to people's general attitude; this will provide useful information for the product improvement.

Focus Group (Pilot Study)

This method is the conference between the designing team and the customers. They are grouped together in a room in order to facilitate a discussion in which each respondent states his or her opinions. The face-to-face conference helps the team to be able to observe and consider the behavior of the customers because the group is directed in its discussion to “focus” on certain topics and also using the intensive question. The number of respondents in a focus group is generally around five to fifteen. For larger group, more skills are needed by the facilitator in order to keep the discussion on the desired topics.

Interview

The designing team will individually interview the customers; this method provides the highest efficiency because the given answer will be precise and adequate.

Important points for the interviewer to make when beginning the interview, such as explaining the reason for the interview, explaining the style of the

interview to be conducted, and asking permission to audiotape or videotape the interview.

- The interview's questions usually use a general open-ended question
- List of special topics that should be addressed during the interview
- Closing questions comments and acknowledge to respondents.

2.22 Affinity Diagram and Quality Function Deployment

The Interpretation of the Voice of Customer

Since voice of customers can imply several meaning, and because customer's words are not constrained by any particular discipline, the phase must be sorted before the customer needs can be structured.

After gathering the customer needs from many sources, and after sorting out the quality characteristics and many other items, there is still a large and unmanageable data. The data to be used in the QFD process must be arranged, completed and refined by using the affinity diagram or Tree diagram.

Affinity Diagrams

This is a powerful method used by a team to organize and gain insight into a set of qualitative information, such as voiced customer requirements. Building an Affinity Diagram involves recording of each statement onto separate cards which are then sorted into groups with a perceived association. A title card which summarizes the data within each group is selected from its members or is created where necessary. A hierarchy of association can be achieved by sorting these title cards into higher level groups.

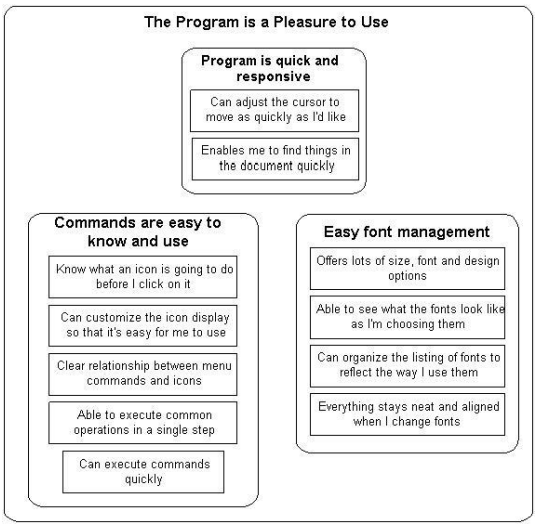

Figure 2-4: Affinity Diagram, Source: Cohen, L. (1995)

Tree Diagram

A Tree Diagram or Hierarchy tree also illustrates the structure of interrelationships between groups of statements, but is built from the top down in an analytical manner. It is usually applied to an existing set of structured information such as that produced by building an Affinity Diagram and is used to account for flaws or incompleteness in the source data. Working down from the top a team can make amendments at each level and the completed hierarchy can be drawn as shown below.

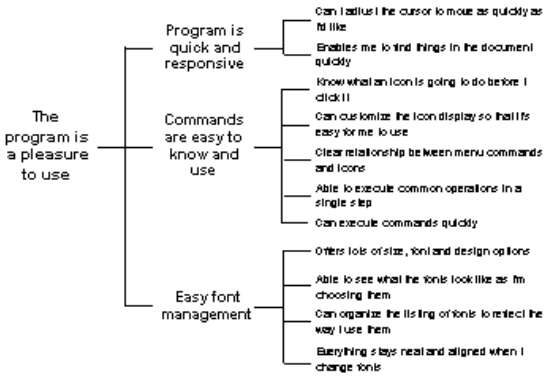

Figure 2-5: Tree Diagram, Source: http://www.shef.ac.uk/~ibberson/QFD-IntroII.html

Establish the Absolute Importance of Needs

The Absolute Importance is normally chosen from the scaled selection of importance. The team should ask the respondents to rate the importance of each need on a scale provide by interviewer. The rate of importance is based on a five-point scale where the values 1 to 5 may be defined as

1 = not important to the customer

2 = slightly important to customer

3 = moderately important to customer

4 = very important to customer

5 = most important to customer

Quality Function Deployment

According to Cristiano, Liker, & White(1995), Qualify Function Deployment is a tool for bringing the voice of the customer into the product development process from conceptual design through to manufacturing. QFD is a systematic process for capturing customer requirements and translating these into requirements that must be met throughout the 'supply chain'. The result is a new set of target values for designers, production people, and even suppliers to aim at in order to produce the output desired by customers.

The basic quality function deployment methodology involves four phases that occur over the course of the product development process. During each phase, one or more matrices are constructed to plan and communicate critical product and process planning and design information. The QFD methodology is shown in Figure below

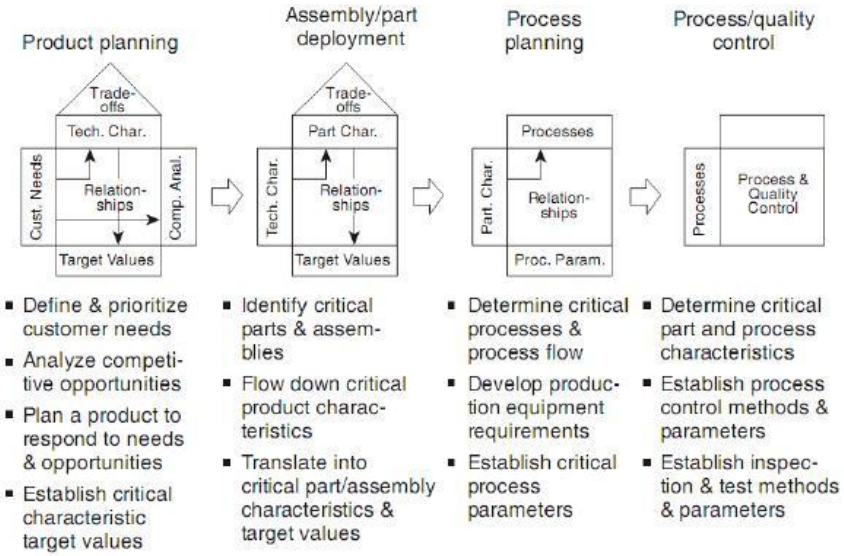

Figure 2-6: The Four-Phase QFD Approach to Building Quality, Source: Mital (2007)

2.2.3 Evaluation Matrix

Quality Function Deployment (QFD) or another type of requirements definition process must be used to define the requirements or technical characteristics of a process design. A more complete specification may be prepared. These requirements, specifications or technical characteristics are then used as the basis for developing various concepts. Process benchmarking, brainstorming, and research and development are sources for new process concepts. Once concepts are developed, they are analyzed and evaluated. Cost studies and trade studies are performed. The evaluation matrix or concept selection matrix can be used to help with this evaluation process. This overall process is shown below:

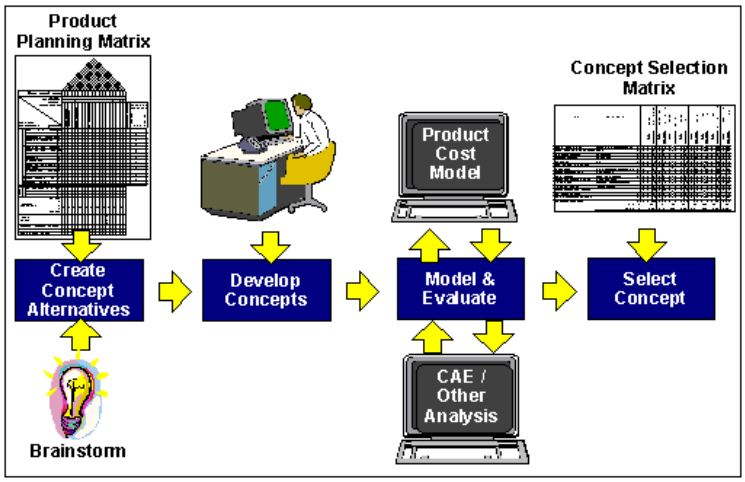

Figure 2-7: Product design steps, Source: http://www.asq.org/learn-about-quality/decision-making-tools/overview/decision-matrix.html

The concept selection matrix shown below lists the product requirements or technical characteristics down the left side of the matrix. The technical characteristics are derived from the QFD product planning matrix. The concept alternatives are listed across the top. Each alternative is rated on how well it meets the technical characteristics or requirements.

Concept Selection Matrix

Criteria	Target Value	Prty	Thread		Coil Spring		QRTN Rev. 3		Sliding Plate		Jt. Co./ Cust.		Lock Ring	
No loose parts during joint operation	Zero	4.3	5	22	5	22	5	22	5	22	5	22	5	22
Joint override time	4 hrs. per nozzle	1.2	3	3	1	1	3	3	1	1	3	3	3	3
Operator force / torque limit (normal conditions)	Torque=16 ft-lbs / 32 lbs	2.2	3	7	2	4	4	9	2	4	4	9	4	9
No skeleton damage at max. force / torque limit	X torque / Y force	2.2	3	7	4	9	4	9	4	9	4	9	4	9
Minimum joint activation force / torque	36 in-oz / X lbs	3.1	4	12	4	12	4	12	4	12	4	12	4	12
Operator lifting force	40 lbs	2.8	5	14	1	3	4	11	4	11	5	14	4	11
Target cost	$1,367	5.0	5	25	4.4	22	2.6	13	4.4	22	1.5	8	3.5	17
Variation in structural / dynamic parameters	Less than 5%	1.6	5	8	2	3	4	6	4	6	4	6	4	6
Deflection limit under 4g load	0.04 ins.	2.0	5	10	4	8	5	10	5	10	5	10	5	10
Guide thimble stresses	X psi	2.9	5	14	4	11	4	11	3	9	4	11	4	11
Adapter plate stress	X psi	1.7	4	7	4	7	4	7	5	8	4	7	4	7
Joint component stresses	ASME Stress limits	2.7	5	14	4	11	4	11	4	11	3	8	4	11
Use of MFRD approved material	Yes / No	3.0	5	15	5	15	5	15	5	15	5	15	5	15
Set-up & teardown time	4 hrs. total (2 hrs. each)	4.3	4	17	2	9	4	17	4	17	4	17	4	17
Joint lock verification time	10 mins. per nozzle	2.8	2	6	1	3	4	11	5	14	2	6	2	6
Maximum removal / installation time	60 mins. total	3.5	3	11	2	7	4	14	5	18	3	11	4	14
RCCA / TPD functional gauging drag	15 lbs max/40 lbs max	1.6	4	6	3	5	4	6	3	5	3	5	3	5
Flow (cooling) through annulus	Exit area > annular area	1.2	5	6	5	6	5	6	3	4	5	6	5	6
Protrusion above adapter plate	0.15 in.	2.8	5	14	5	14	4	11	4	11	5	14	5	14
Guide thimble mis-location from true center	0.01 in.	1.9	5	10	2	4	4	8	3	6	2	4	4	8
Joint internal diameter	0.552 in.	1.0	4	4	3	3	4	4	3	3	3	3	3	3
Top plate width (Character "S")	0.988 in.	1.2	5	6	5	6	4	5	5	6	5	6	5	6
Variation in delta P	Less than 5% change	0.6	4	2	4	2	4	2	4	2	4	2	4	2
OD collet-to-insert clearance	Zero on nominal stackup	3.2	5	16	5	16	5	16	5	16	3	9	5	16
No moveable tooling parts	Zero	4.0	4	16	1	4	5	20	4	16	5	20	5	20
Tooling stresses acceptable	0.5X mat'l yield strength	1.7	3	5	3	5	3	5	3	5	3	5	3	5
Joint operation cycle test	100 cycles	2.2	3	7	3	7	3	7	2	4	3	7	3	7
Crud test-jt. op. w/in force/torque limits	Equiv. to 1200 EFPD	2.5	4	10	4	10	4	10	3	8	4	10	4	10
Thermal cycle test-op. w/in force/torque limits	X Cycles	2.0	4	8	4	8	4	8	3	6	4	8	4	8
In-operation loose parts simulation / analysis	Zero	1.2	3	4	5	6	3	4	4	5	3	4	3	4
Locked joint damage force	80 lbs	1.2	5	6	5	6	4	5	4	5	3	4	2	2
Inactive joints	2 joints (different quadrar	1.9	4	7	4	7	4	7	2	4	4	7	4	7
Joint lateral impact resistance	Survive 2g impact	2.0	3	6	4	8	4	8	4	8	3	6	4	8
Project Schedule	12 months	3.0	4	12	3	9	4	12	1	3	3	9	2	6
Project Budget	$X	3.0	5	15	3	9	4	12	2	6	4	12	3	9
Technical Difficulty / Risk	Moderate	2.0	4	8	3	6	4	8	1	2	3	6	3	6
	Total Rating			359		287		346		313		315		333
	Normalized Rating			1.00		0.80		0.97		0.87		0.88		0.93
	Final Ranking			**1**		**6**		**2**		**4**		**5**		**3**
	Selected Designs for Further Development			**x**				**x**						

Figure 2-8: Example of Evaluation Matrix, Source: http://www.asq.org/learn-about-quality/decision-making-tools/overview/decision-matrix.html

2.3 Instructional Design

There are two types of Instructional design

- Instructional System Design
- Instructional Design Process

2.3.1 Instructional System Design

Instructional System Design models uses formative evaluations the all the phases and a summative evaluation at the end of the process. Instructional System

Design models have a broad scope and typically divide the instruction design process into five phases:

1. Analysis
2. Design
3. Development
4. Implementation or Delivery
5. Evaluation

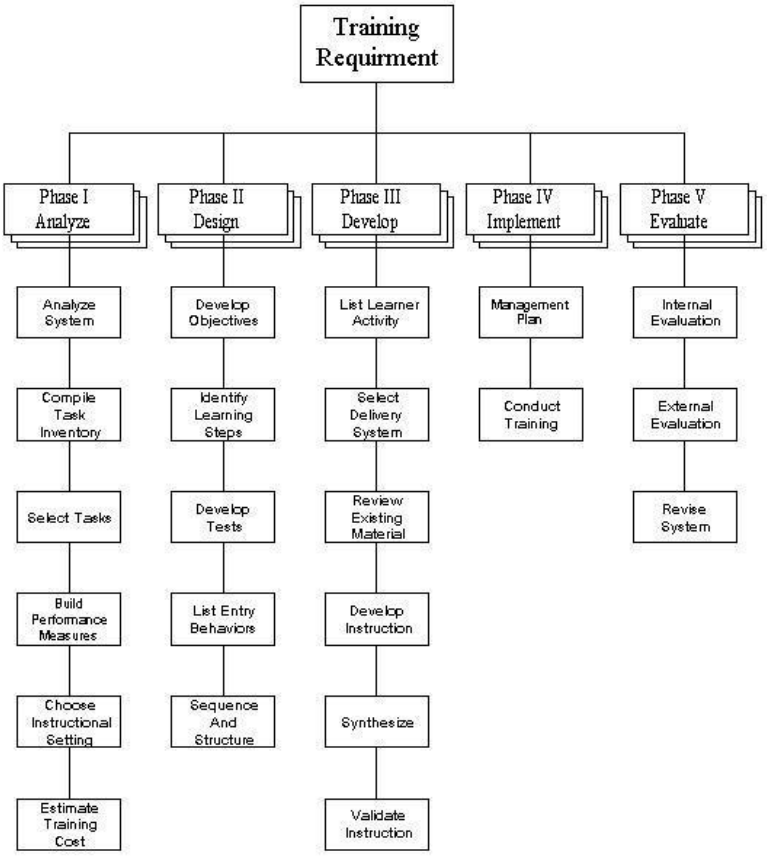

Figure 2-9: Instructional System Design Model, Source: Florida State University Five Phases of ISD (1975)

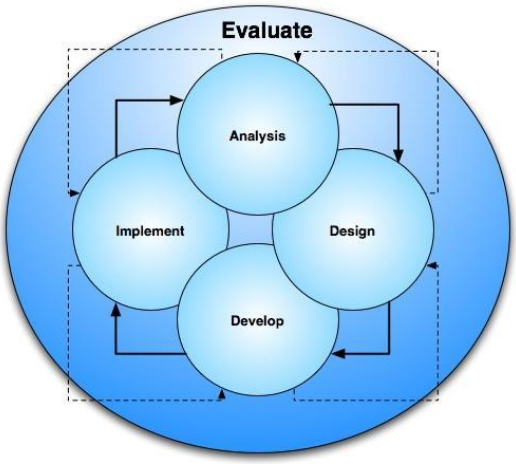

Figure 2-10: Dynamic Instructional System Design Model, Source: U.S. Army Field Artillery School (1984).

2.3.2 Instructional Design Process

Instructional Design models or theories may be defined as frameworks for developing modules or lessons that

Increase and/or enhance the possibility of learning

Encourage the engagement of learners so that they learn faster and gain deeper levels of understanding.

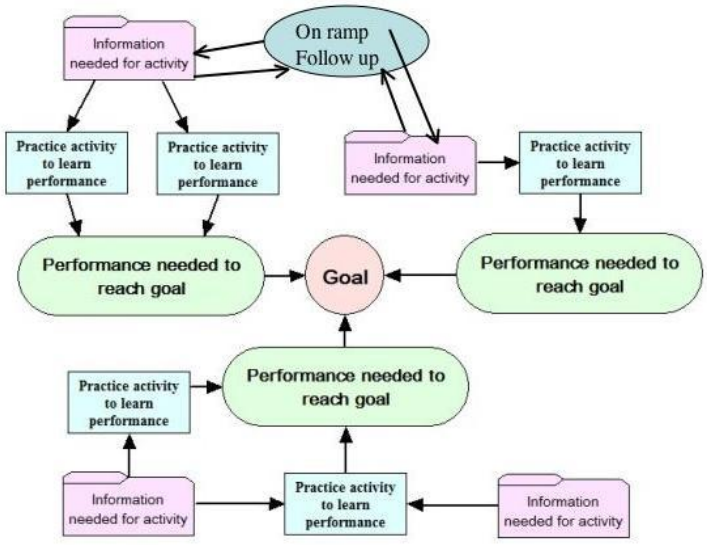

Figure 2-11: Instructional Design Model, Source: Merrill (2002).

Instructional Design models are less broad in nature compared to Instructional System Design model and mostly focus on analysis and design, thus they normally go into much more detail, especially in the design portion.

Instructional Design models are normally employed in conjunction with Instructional System Design models. The Instructional System Design process keeps the entire training, development, or educational process on the correct path or objective, while one or more Instructional Design models are used that best supports the learning process being designed. (Van Merriënboer, 1997, pp2-3)

CHAPTER III

NEC Program Information and Procedure

In this chapter will be the detailed methodology of the thesis, showing the information necessary and the process that will be done. These are the information that will be included in chapter 3,

3.1. NEC Program Information

3.2. NEC Program Objective & Strategies

3.3. NEC Program Procedure

3.1 NEC Program Information

In order to stimulate the economy and solve the unemployment problem, in 2002 The Department of Industrial Promotion began a project of new business creation, called NEC (New Entrepreneurs Creation), to support new graduates, unemployed and employee with basic education to be ready to become entrepreneurs and establish new businesses, as well as to strengthen the existing business for business heir.

NEC project is very successful. The enterprises have created a new investment and employment. However, it is necessary to review and update the processes of the project to maintain its effectiveness because the economic environment has changed every year.

NEC is the main project activities include business knowledge training, consulting, business observation, and provide assistance to new entrepreneurs. The Department of Industrial Promotion organize this project by cooperate with Educational Institutions, Financial Association, and the Institute of the Ministry of Industry.

NEC Training activities in the business creation and expansion is considered the core of the project. Aims to help people who have completed training gain some knowledge and understanding about business processes and also can be linked to business planning in a systematic way. Since the first year, 2002, there are 100,280 interested participants have been selected.

3.2 NEC Objectives and Strategies

Concepts and Scope of NEC Program

NEC program begin with the purpose to promote and develop the SMEs which is a key strategy for the economic recovery and to build the economic foundation in the long term. With the creation and development of potential entrepreneurs, it will help in solving problems and enhancing the enterprise capability to survive and progress. It also helps in create value added and employment in the economy and society of the country. These will make Thailand to have more economic resources tax base in order to earn more income to develop the country further.

SMEs in Thailand affected by heavy financial crisis in Asia during the year 1996-1997 resulting in lack of capital and liquidity to operate the enterprise. And there were so many enterprises that closed, and most of them must reduce the employment. This is the motive to the Ministry of Industry, in which the Department of Industrial Promotion (DIP) is trying to find ways to help and develop the people who have been fired, that has the potential to become new entrepreneurs, to have knowledge in the business creation and management. And become the “New Entrepreneurs" that can be adjusted themselves along the changing economic conditions.

In addition to the motivations arising from the financial crisis in Thailand, the department of Industrial Promotion also wants to solve the issue that in the past, there are trend that most Thai graduated in the higher education are often aimed to career as an officer or employees while the others that did not have the high education, are always work as the freelance or entrepreneur. Their basic knowledge usually is not

sufficient to manage and develop the business to have the ability to compete under the free trade system which in an age where technology is the conductor. New strategies to strengthen the Thai SMEs need to focus and support on those with good education, to capable to become the entrepreneur. Thus, NEC program is a key factor to creating new businesses and new entrepreneurs supplying to Thailand economy. And encourage these businesses to grow and strengthen their capabilities, these will also increased the Thailand economy capabilities continuously.

3.2.1 NEC Program Strategies

The strategy works as follows.

1. Raise awareness in the business.
    - Motivate people to see the potential benefits and opportunities for entrepreneurship.
    - Create new entrepreneurs.
    - Encourage business with Governance
2. Develop capacity of entrepreneurs.
    - Establish an enterprise branch to the maturation and development patterns fostered entrepreneurship and enterprise.
    - Systematically To become a global organization.
    - Encourage a system of effective management.

3.2.2 NEC Program Objectives

1. To support the new graduated, employee and unemployed with good education who have the potential to become entrepreneurs to have the opportunity to create their own business.

2. Establish new enterprises as a source of new employment in the economy of Thailand.

3. To strengthen the enterprise especially the small business founded in the first 3 years to be able to survive and maintain employment.

4. Prepare the "Business heirs" to be able to operate continuously and create opportunities for further business expansion in the future.

3.2.3 NEC Program Indicators

Indicators of project output is the number of participants that passed through the training process, consulting and be able to proceed the business plan. NEC Project Indicators consist of the number of participants who can establish a business. (With business registration and / or the business transactions), and the number of new entrepreneurs who can expand the existing business or number of business heir that have active roles in the inherited business, as well as investment and increasing in number of employment.

Since the preparation of financial investment and business establishment activities, usually requires a long period of time to prepare and eventually there are a large number of new entrepreneurs that can establish the business. The Department of Industry Promotion will be in the track of achievement of the project in each year. And also includes monitoring the survival of new entrepreneurs for three years.

3.3 NEC Program Procedure

The process of creating entrepreneurs and strengthen the existing enterprise in order to be able to compete in the global market. The program needs to provide support in many areas. Department of Industrial Promotion that responsible for promoting industrial development in SMEs has issues the procedure to strengthen entrepreneurship and enterprise as shown below.

1. Recruitment and selection the potential new entrepreneurs.
2. Enhance the knowledge and understanding of the holistic approach to business management.
3. Give advice to develop business ideas and business plan.
4. Provide consulting to resolve difficulties in establishing businesses.
5. Provide the opportunities in business and marketing via business networking
6. Provide the links to sources of funds in order to encourage the business investment.
7. Strengthen and enhance capability in various business fields.
8. Develop the standards and capability to compete globally in order to sustainable business growth.

Diagram is shown below.

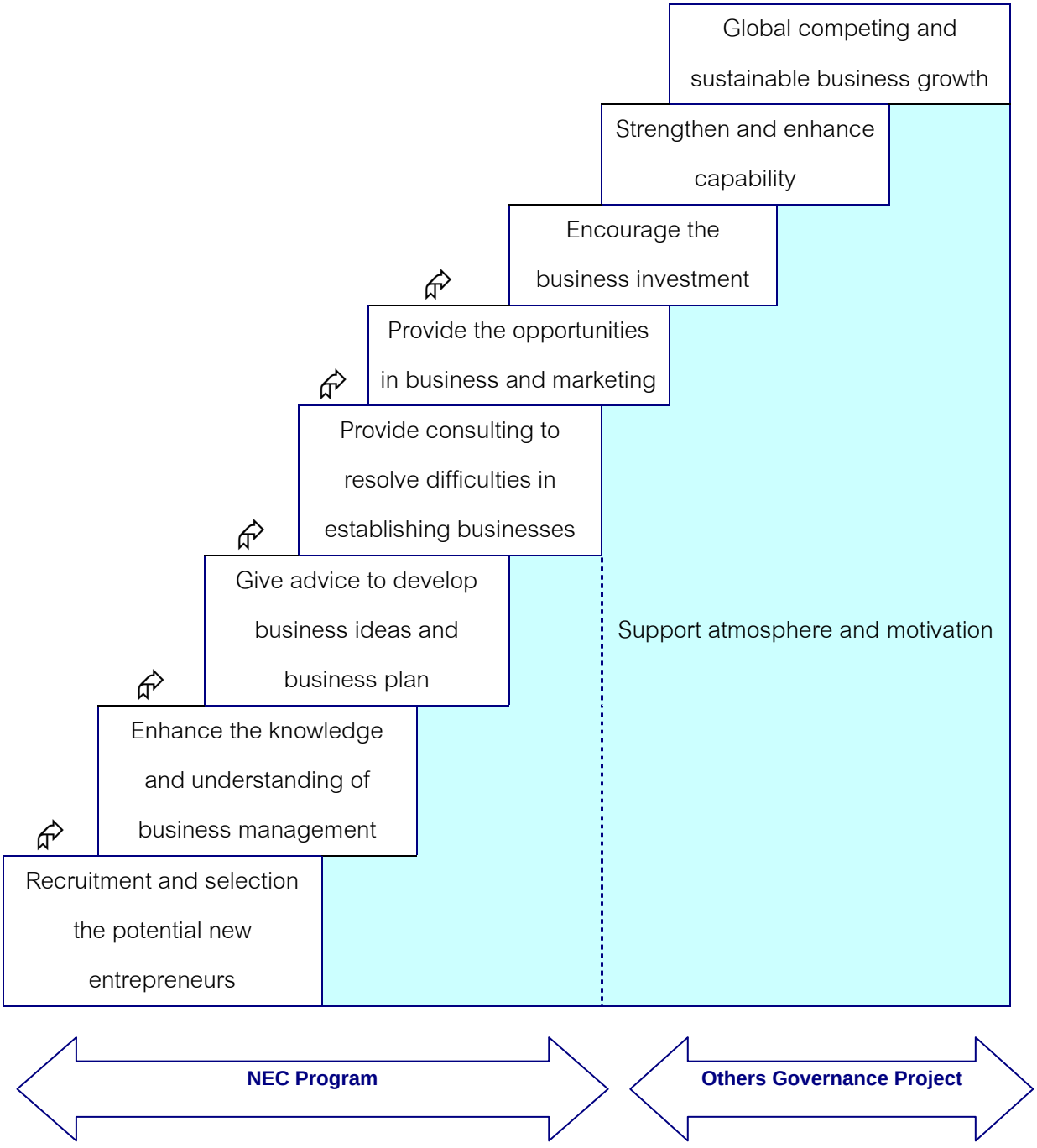

Figure 3-1: NEC Program Procedure

NEC Program procedure consists of recruitment and selection of potential entrepreneur to provide assistance and to set up a business plan, and encourage investment as well. After that the new entrepreneur will have channels that will be supported under the others government project of the Department of Industrial Promotion and agencies in the public sector, in order to sustain and strengthen the entrepreneur capability and develop to international level.

3.4 NEC Current Course Module

The current NEC course module was developed by the Department of Industrial Promotion Center. It can separated into three main sections

1. Basic Knowledge Training for New Entrepreneurs (96 Hours)
2. Business Consulting and Problem Solving in Business Establishment (60 Hours)
3. Business Observation (6 Hours)

3.4.1 Basic Knowledge Training for New Entrepreneurs

Basic Knowledge Training for New Entrepreneurs was categorized into 7 basic modules. The current 7 basic module and their contents from Department of Industrial Promotion Center are listed blow;

Module 1: Policies and measures to promote SMEs (3 hours), contents:

1. Master Plan / Action Plan promoting small and medium-sized enterprises.
2. Measures and projects promoting development of SMEs.
3. Measures to create new entrepreneurs.
4. Measure funding SMEs.

5. Tax benefits and investment.

6. Development strategy at the province / province

7. Service of the Department of Industrial Promotion and related agencies.

Module 2: Orientation, to become new entrepreneurs and analysis of business investment opportunities (12 hours), contents:

1. Orientation (2-3 hours).

    a. Clarify the purpose and scope of the project.

    b. Group activities and melting behavior relationships.

    c. Managing the expectations of participants.

2. To become new entrepreneurs. (2-3 hours).

    a. Characteristics of entrepreneurs.

    b. The ability and skills required for operators.

    c. An example of a successful business.

    d. Procedures for establishing and developing business.

    e. The importance of business networks.

3. Analysis of business investment opportunities, (at least 6 hours).

    a. Creative Thinking in Business (Creative Thinking).

    b. Analysis of business opportunities.

    c. How to select the idea of establishing a new business.

d. Resources to investment.

Module 3: Marketing Management (12 hours), contents:

1. The importance and concept of marketing.
2. Guidelines for market research for new entrepreneurs.
3. Market segmentation, targeting and positioning.
4. Marketing strategies and techniques for adaptation.
5. Effective sales techniques.
6. The extra content may include, such as
    a. Customer Relationship Management.
    b. The Service Marketing
    c. Electronic Commerce (E-Commerce).
    d. Marketing Management for export.
    e. Marketing strategies for targeted products.
    f. Brand Management.

Module 4: Management Technical in operations (manufacturing, service and supply chain) (15 hours).

The first group contents (approximately 6 hours);

1. Overview of health management products and services.
2. Strategies for creating competitive advantage with product / service differentiation and technology.

3. The use of technology and decisions making about production / operations.
4. The capacity of the product / service and production planning.
5. The location and planning establishment.
6. Safety and environment Management
7. Introduction to quality management.

The second group contents (approximately 6 hours).

1. Supply chain Management and logistics.
2. Inventory Management.
3. To measure productivity and optimization techniques.
4. The importance of research and development in adding value and developing products / services and management of intellectual property.
5. Calculate the cost of production / operations.

The third group contents (approximately 3 hours).

1. Using information technology to support the management of production / operations.
2. Experienced production management / operations.
3. Additional topics as appropriate, regarding to the interest of participants.

Module 5: Organizational and Human Resource Management and laws related to business (12 hours).

The first Group contents: Organizational Management (approximately 3 hours).

1. The main function of management.
2. Principles and procedures of the organization.
3. The organizational plan.
4. Design the organizational structure according to the business plan and management of family enterprise.
5. The division of duties and responsibilities.
6. Internal communication
7. Ethics / Governance in the business.
8. Subject that may be added such as
    a. Guidance and leadership.
    b. Management of business data and information to management.
    c. Computing and Information Technology for SMEs.
    d. The format of learning organizations.
    e. Corporate culture and management strategy.

The second group content: Human Resource Management (approx. 3 hours).

1. Organizational behavior and human resource management.
2. Manpower planning.
3. Analysis of candidates.
4. The task analysis / determination of performance.
5. Team building and teamwork.
6. Create a better quality of life in the work.
7. The development of human resources and training.
8. Compensation.
9. Welfare and motivation.
10. Evaluation of the performance.
11. Further topics that may include, such as
    a. Assignment.
    b. The role of the executive.
    c. Time Management for Executives.

The third group content, Laws related to business (approximately 6 hours).

1. The importance of law-related business and responsibilities.
2. Model of business and laws related to the business establishment.
3. Laws relating to the purchase, sale and lease violations etc.

4. Laws and practices relating to labor (e.g. Act. Labor and Social Security)

5. Laws and practices relating to tax

6. Intellectual property law.

7. Further topics that may include, such as

    a. Environmental laws and legal facilities.

    b. Law-related products for consumer protection.

    c. Rules relating to the applicant production / service

Module 6: Financial and Accounting Management (24 hours).

The first Group contents: Accounting Management (around 12 hours).

1. Principles accounting and cycle accounting

2. The financial statements.

3. The cost structure and classification of costs.

4. Planning gain (cost volume profit).

5. Apply knowledge of tax applicable to the account.

6. Accounting standards for SMEs.

The second group contents: Financial Management (about 12 hours).

1. The concept of financial management / financial management basics.

2. Estimation of investment needs.

3. Cash budget.

4. Financial analysis and business decisions.

5. Financial Strategy, funding and costs.

6. Liquidity Management

7. Analysis of the financial feasibility of the project.

8. Risk Management.

Module 7: Planning Strategies (18 hours), contents:

Section 1 (should be trained before entering the module 3 - 6).

1. The key components and processes of a business plan.

2. Corporate strategy. (And business unit level - if any).

Section 2 (should be completed modules 3-6 or adding as extra training in modules 3 - 6).

1. Strategic-level functions.

2. Technical presentations and Business plans.

3.4.2 Business Consulting and Problem Solving in Business Establishment

In the second part, the business consulting and problem solving in business establishment (60 hours), module 8 will provide the advice about financial management on the project of the new entrepreneurs. That may be individual or in small groups. Each participant might be allocated time to receive advice from different consultants. According to the needs of each participant, the advisory team will include experts from various fields, such as Marketing and Production Management, Finance and Accounting Etc. The schedule will be notified prior to the training.

3.4.3 Business Observation

The business observation (6 hours), module 9, the content unit may determine regarding to the interests of participants and the location of the visited place.

The NEC course modules flow chart can be summarized as follow;

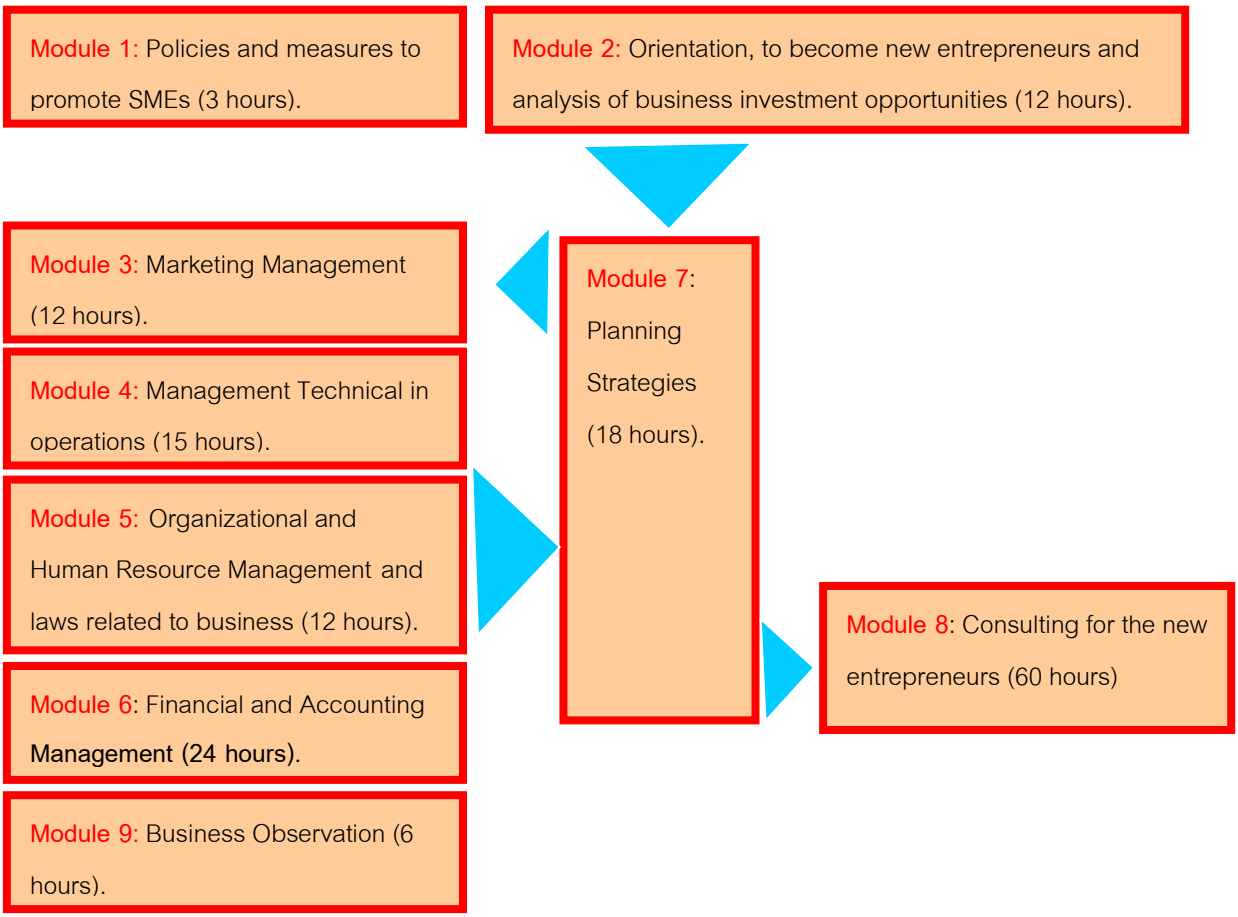

Figure 3-2: NEC Program Course Module Flow Chart

3.5 Conclusion

From the information given, the researcher can use it to combine with participative observation vision and experience to generate an effective NEC Program to measure against the participant requirements and government policies. The steps of instructional design process are already been presented to show how the process design can be implemented in educational course structure design using some tools and techniques to gain effectiveness. To generate effective course structure, the researcher will have to discuss and work together with the project leader and experts from public sectors in order to evaluate the suggested NEC Course Structure.

Since all the information about the NEC project procedure and current course structure are summarized and presented in this chapter, the next chapter will be the NEC process design result and analysis. It will show the result step by step of how the NEC Suggested Course Structure is generated and what information can be taken from it.

CHAPTER IV

Process Design for NEC Program Result and Analysis

4.1 NEC Program Analysis and Interpretation of Data

84 completed participants from 178 participants taking an NEC course module at the IMTCU were the subjects of the research. While the participants took the modules, the classes were observed to record the learning process and situation; furthermore, deep interviews, thinking-aloud and stimulated recall procedures were taken. The study also evaluated the participant's cognitive changes after taking NEC course modules through class observation and analysis of documents.

The researcher was participated in the NEC class of year 2010, Third Class, as the participant that passes though the current NEC procedure. Total number of participants that participated in NEC program was 178 participants which separated into three classes; 57, 61 and 60 participants respectively. Due to this program is the social supported program thus there are some participants that does not take the course seriously and not attend the courses. Resulting in 84 completed course program participants of 178 participants.

During the participation, the researcher also asked the other participants about the idea of the course, difficulties, and the suggestion concerning program improvement, however most of the analysis were proceeded after the NEC course year 2010 was finished around three months, The researcher designed to create the questionnaire for two parts, the first one is the closed end questionnaire to gathering the data concerning the current course structure and the second one, opened question in form of interviewing regarding the suggestion of program improvement. So in these topics, the researcher would like to separate into three parts.

The first one is the statistical analysis concerning the background information of the participant which its effect the successfulness of the program or not.

The second part was aimed at the statistic analysis of the closed end and opened end questionnaires concerning the successfulness of NEC program regarding the satisfaction toward program course structure of the successful participants that created/expanded the business compared to the unsuccessful participants that didn't create or expand the business.

The thirds part concerning the concept generation by interpreting the suggestion data regarding the program improvement into the concepts toward course structure design.

All three parts were analyzed based on the 84 completed course participant which 29 of them are successful in created/expanded business and 55 of them are unsuccessful didn't created or expanded the business.

4.1.1 Participant's Background, Attendance and Business Plan Result Analysis

Study the background, attendance and business plan result of the participants in order to find the significant factor toward the successfulness of the program. After the class was finished around 3 months there will be the first result tracking to all the participants in order to ask them how are they business going? Are they create or expand the business or not? The data will show in the chart below.

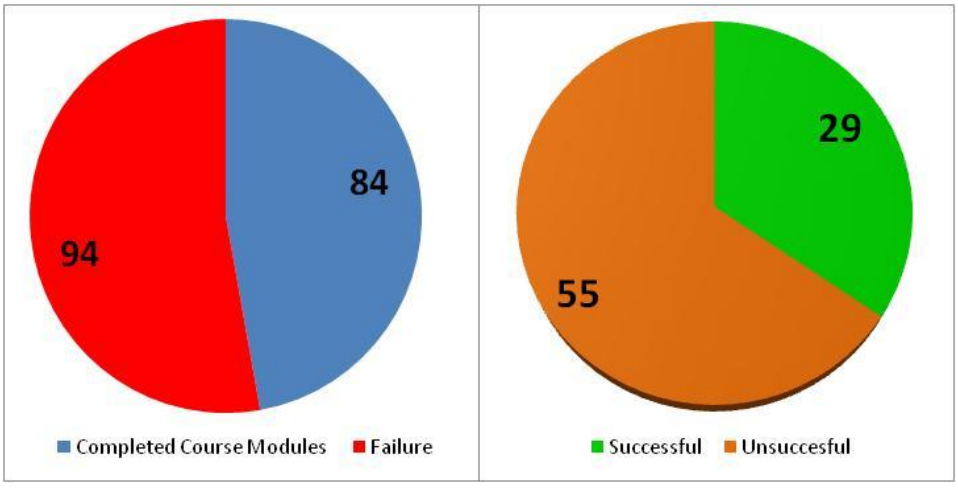

Figure 4-1: No. of Certified Participants and Success Ratio at NEC IMTCU, 2010

First tracking result shown that from 84 participants that completed the course modules, there are 29 of them that created or expanded the businesses (successful participants).

According to the Department of Industrial Promotion policy to welcome and accept all qualified candidates regarding the NEC specification which no quota or ratio between participant characteristic. Therefore in first step, the researcher would like to see the relationship between the participants that successes in creating new business or expand the existing business compared to the participants that did not create or expand the business. Thus, team will use the statistic tool to analyze the background factor that significant to the successfulness of most participants.

Considering from participant application form and interview information, the background factors that may have an effect to the NEC performance are list below;

1) Sex

2) Status before Training NEC Program

3) Education

4) Type of Business

The researcher also analyze the attendance and business plan result

5) No. of Hours Attending Class

6) Business Plan Result

Which in each factor, there will be the different between the group, thus the R-Square test will be used in order to see the relationship between successful and unsuccessful group.

Sex:

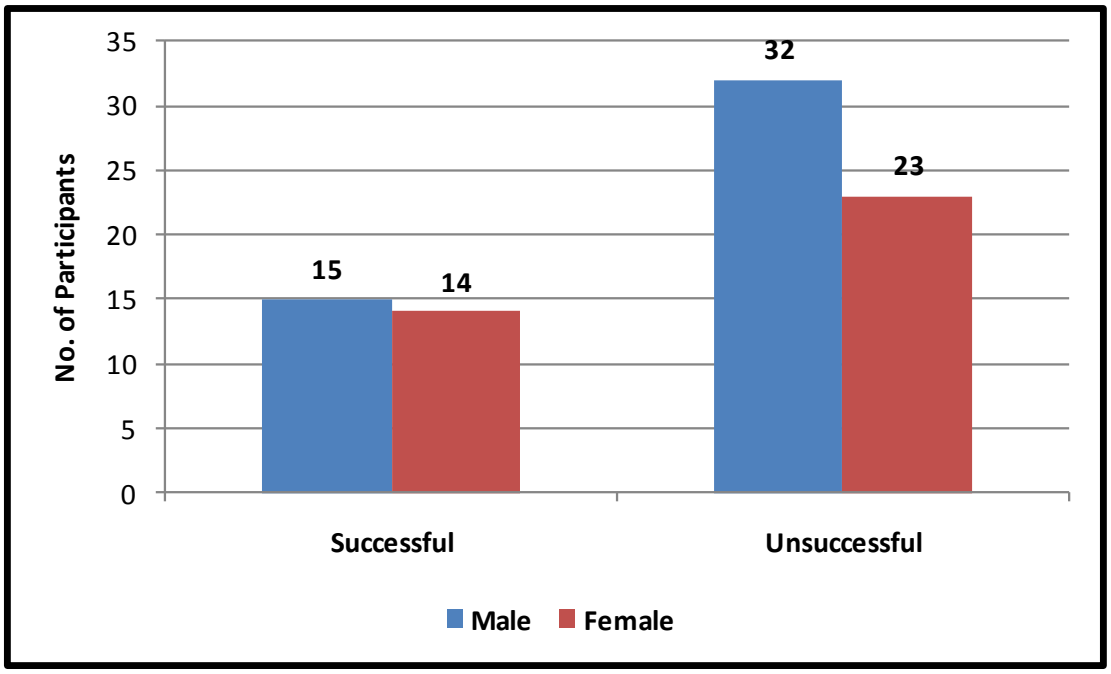

Figure 4-2: Sex Ratio at NEC IMTCU, 2010

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.062[a]	.004	-.008	.48029

a. Predictors: (Constant), Sex

Table 4-1: R Square Test on Sex Factor

Status before Training NEC Program:

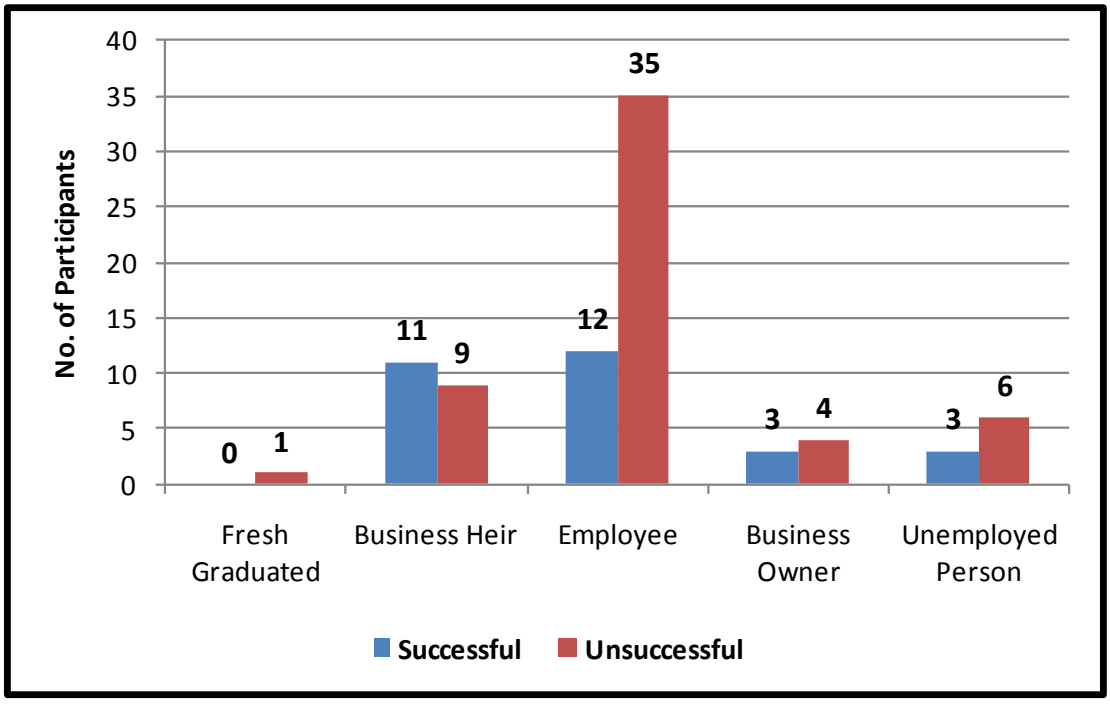

Figure 4-3: Status before Training NEC Program Ratio at NEC IMTCU, 2010

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.085[a]	.007	-.005	.47946

a. Predictors: (Constant), Status

Table 4-2: R Square Test on Status Factor

Education:

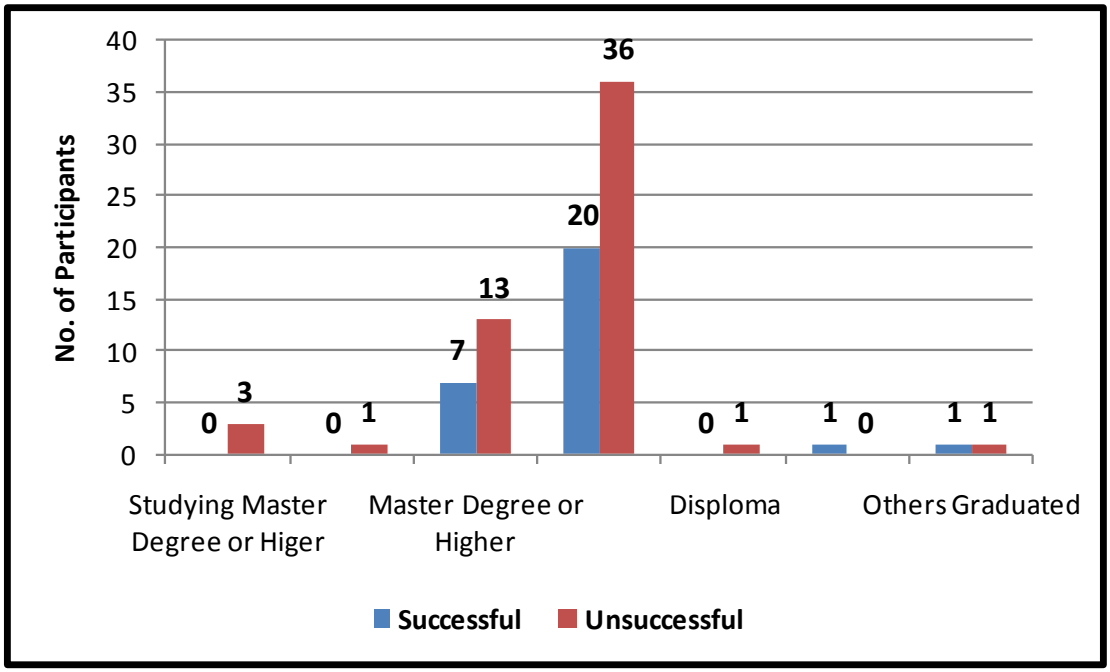

Figure 4-4: Educational Background Ratio at NEC IMTCU, 2010

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.155[a]	.024	.012	.47536

a. Predictors: (Constant), Educational

Table 4-3: R Square Test on Educational Factor

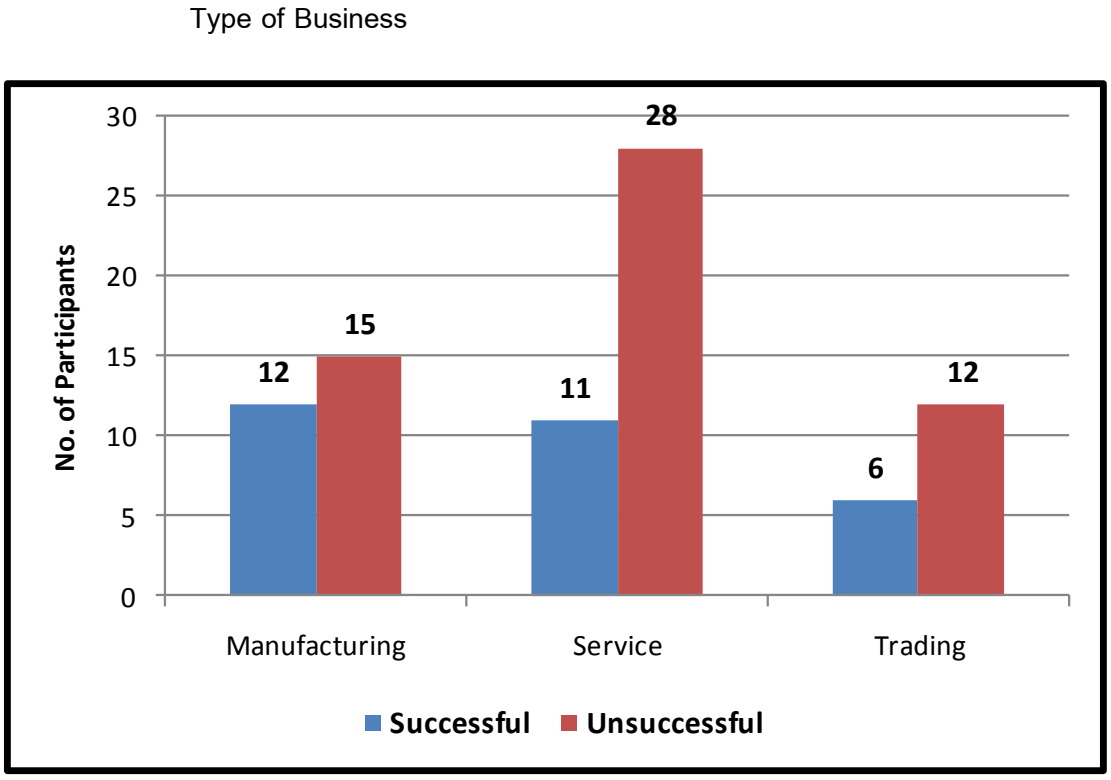

Figure 4-5: Type of Business Ratio at NEC IMTCU, 2010

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.101[a]	.010	-.002	.47875

a. Predictors: (Constant), Business Type

Table 4-4: R Square Test on Business Type Factor

No. of Hours Attending Class:

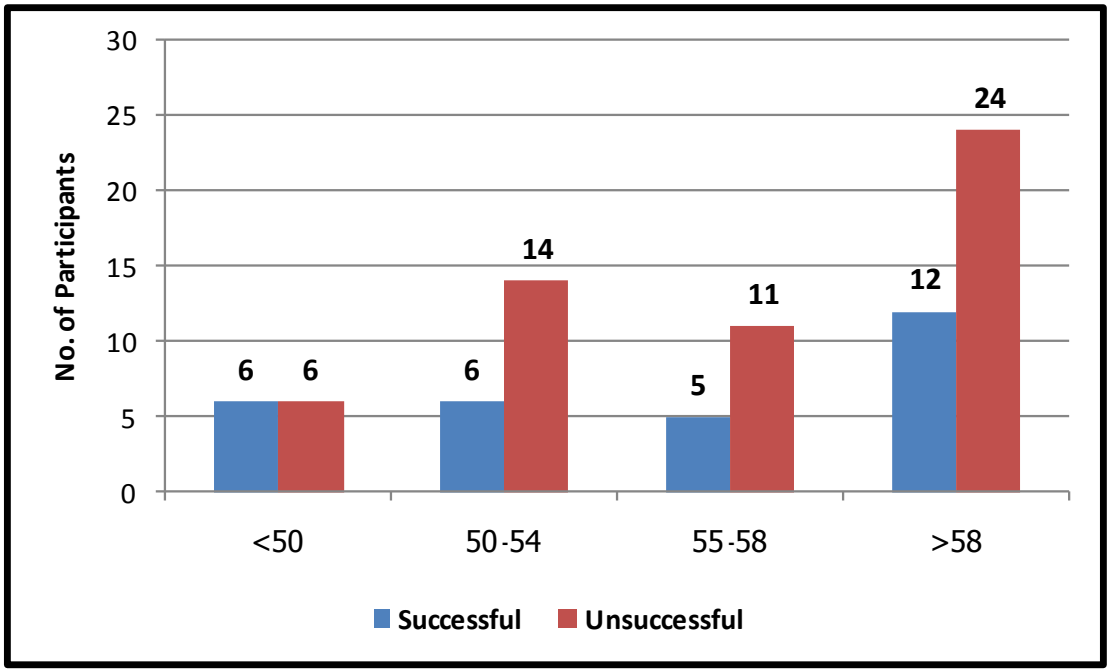

Figure 4-6: No. of Hours Attending Class Ratio at NEC IMTCU, 2010

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.095[a]	.009	-.003	.47905

a. Predictors: (Constant), Class Hours

Table 4-5: R Square Test on No. of Hours Attending Class Factor

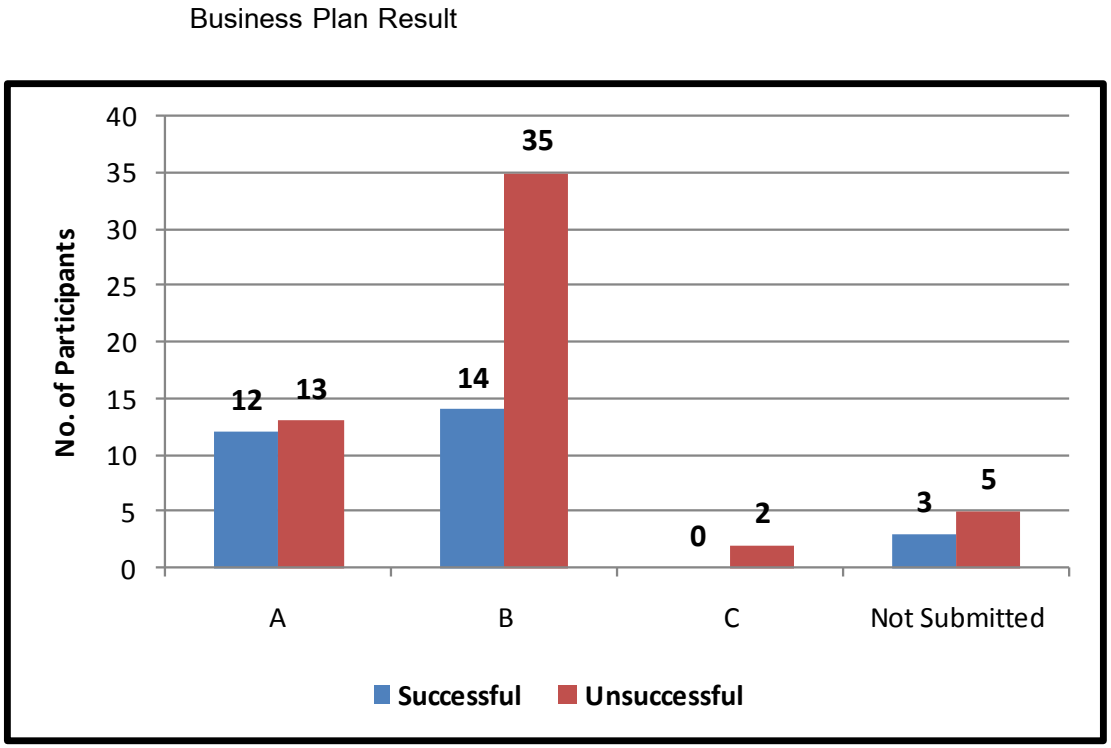

Figure 4-7: Business Plan Result Ratio at NEC IMTCU, 2010

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.108[a]	.012	.000	.47842

a. Predictors: (Constant), Business plan

Table 4-6: R Square Test on Business Plan Factor

Regarding to the result shown that there are no significant relationship between background, attendance and business plan result of participant that already created or expanded the business and participants that did not created or expanded the business. Thus, in order to confirm the test result, the researcher will compare the background screening of participants with the previous NEC programs from Department of Industrial Promotion Center,

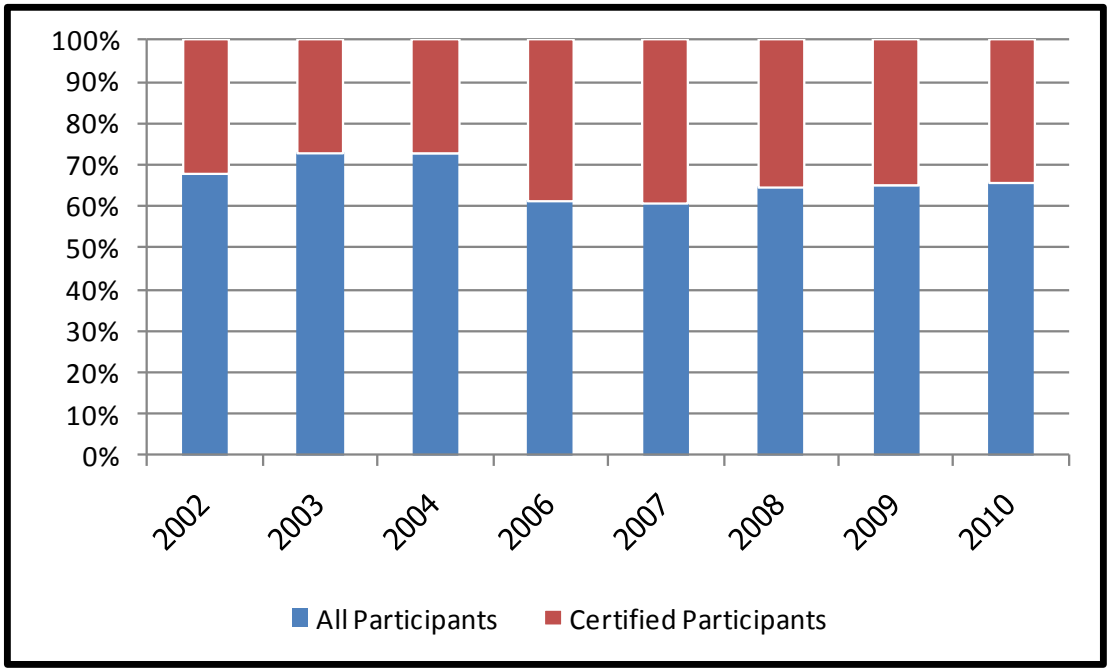

Figure 4-8: Certified Participants Ratio of Thailand NEC Program, 2002 to 2010

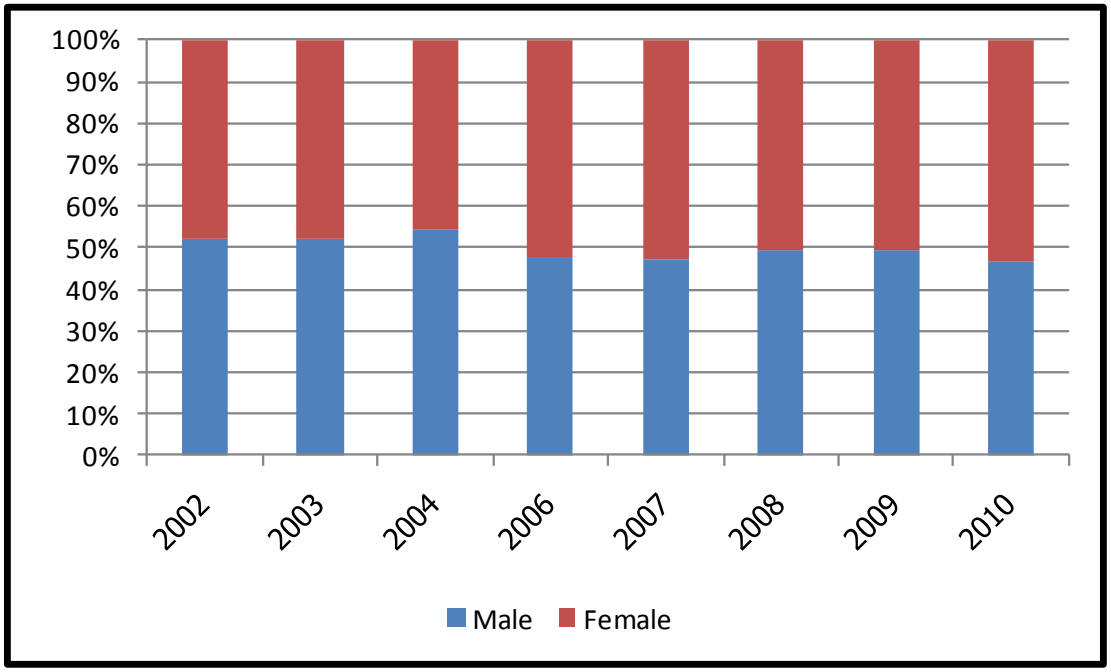

Figure 4-9: Participant's Sex Ratio of Thailand NEC Program, 2002 to 2010

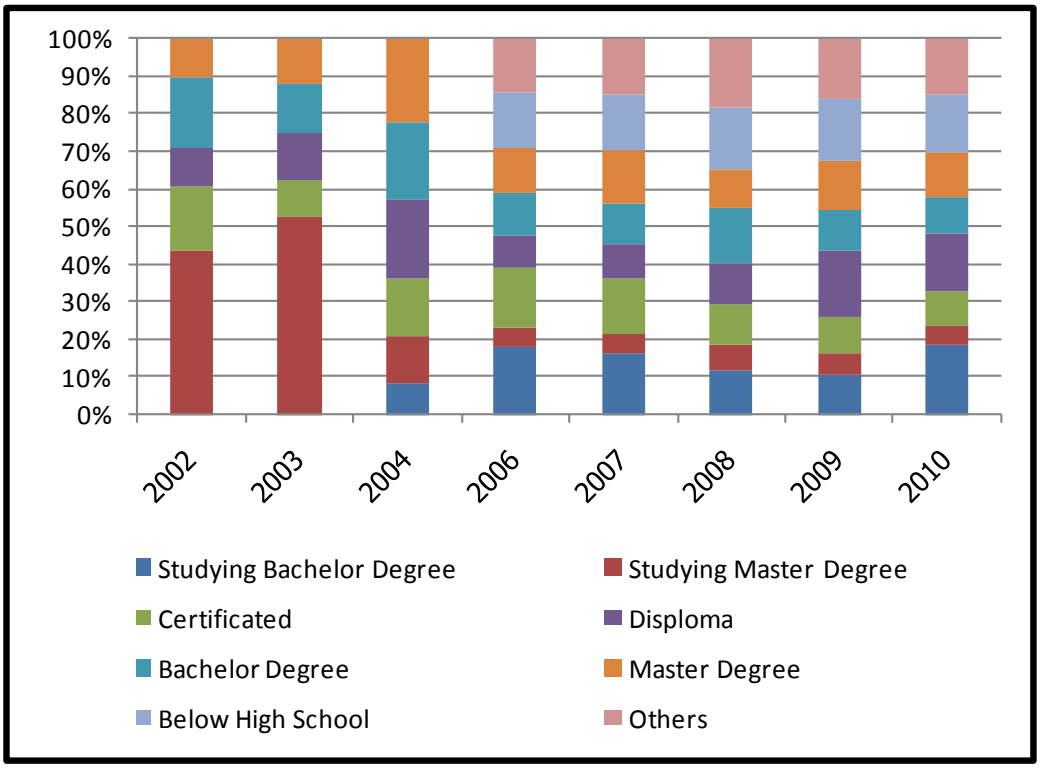

Figure 4-10: Participant's Educational Background Ratio of Thailand NEC Program, 2002 to 2010

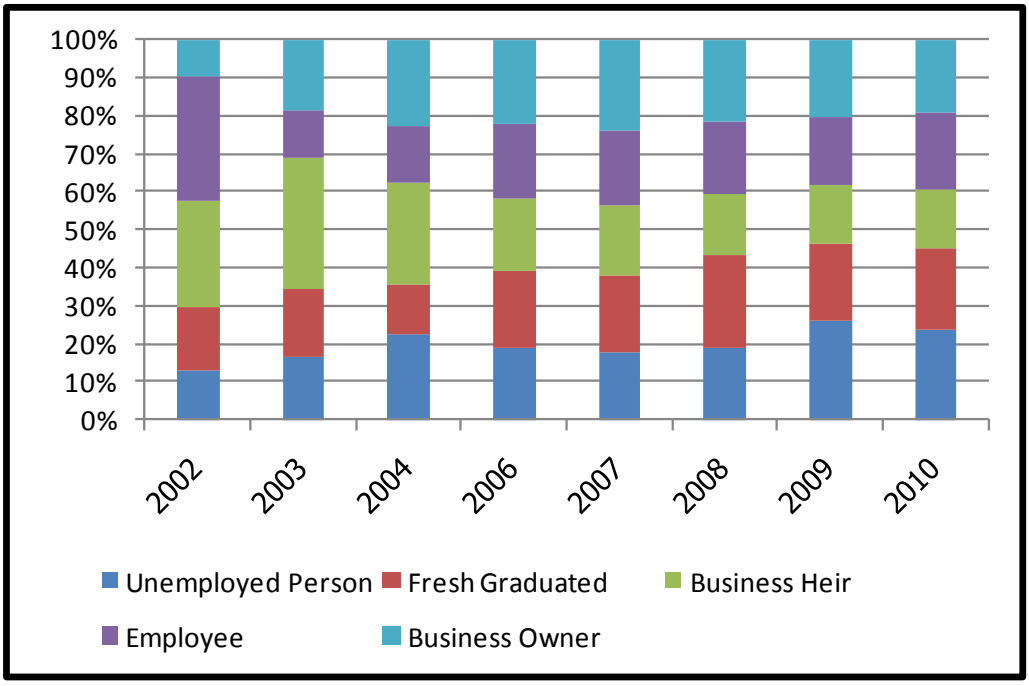

Figure 4-11: Participant's Status before Training NEC Program Ratio of Thailand NEC Program

There are some differentiate among the background of participant in every year NEC program however these data shown only the all participant compared to participants that completed the course module. There are no the further detail concerning the participants that create or expand the business from Department of Industrial Promotion Center. The charts shown that the input or participants in every year program have some differentiated in term of educational background and status before participate the NEC program which have effected toward the program successfulness.

Even though the statistical analysis shown that there are no significant relationship between background of participant that already created or expanded the business and participants that did not created or expanded the business but in order to improve the overall performance of NEC program, the input must be specified and linked to the standard instructional design process or course module design characteristic.

4.1.2 Questionnaire Analysis

First Questionnaire: Close Ended Questionnaire

During the first tracking result, the team also asks the certified participants to complete the questionnaire concerning NEC program performance and satisfaction. The researcher separated the questionnaire into three parts, containing knowledge, Attitude and Activities parts

1. Knowledge

    1. General Business Management

    2. Marketing and Sale Management

    3. Manufacturing and Service Management

    4. Financial Management

2. Attitude
    1. Confident
    2. Risk Tolerant
    3. Self Employed
3. Activities
    1. Business Observation
    2. Shop Exhibition
    3. Group Work
    4. Individual Consulting

Result of Questionnaire Information

All data collected from 84 certified respondents was interpreted in order to find out the participant needs from NEC program. Thus, team will use the hypothesis test to analyze the question (factors) that significant to the participant successfulness and also compared the influence factors between participant that created or expanded the business (Successful Participants) and participants that didn't create or expanded the business (Unsuccessful Participants)

Business Knowledge Questionnaire Result

General Business Management philosophy

The relationship between the participants that already created new business or expanded the existing business and the participant that didn't create or expand the business, regarding the satisfaction toward general business subject

The T test is defined as:

H_0: Level of satisfaction in General Business Subject has no relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

H_1: Level of satisfaction in General Business Subject has relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

The results of T-test are obtained by SPSS programme as shown in the figures below;

Group Statistics

	Result Business	N	Mean	Std. Deviation	Std. Error Mean
General Business Management	New Business Creation & Expanding the Existing Business	29	4.0690	.65088	.12087
	Preparation or Do Nothing	55	3.8909	.65751	.08866

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									Confidence	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
General Business Management	Equal variances assumed	.127	.723	1.184	82	.240	.17806	.15037	-.12108	.47720
	Equal variances not assumed			1.188	57.593	.240	.17806	.14990	-.12204	.47815

Table 4-7: T-test on General Business Management Subject

From the SPSS calculations, the F-value = 0.127 and P-value (Sig) = 0.723, therefore P- value is greater than 0.05, so *"Equal variances assumed"*, at significance level α = 0.05.

The testing value, t= 1.184 and Sig (2-tailed) =0.24, thus P-value is greater than 0.05, *"Fail to reject H_0"*. We can summarize that there are no relationship in level of General Business subject with the participants that already created new

business or expand the existing business or the participant that didn't create or expand the business

Marketing and Sale

The relationship between the participants that already created new business or expand the existing business and the participant that didn't create or expand the business, regarding the satisfaction toward Marketing and Sale Management subject

The T test is defined as:

H_0 : Level of satisfaction in Marketing and Sale Management subject has no relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

H_1 : Level of satisfaction in Marketing and Sale Management subject has relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

The results of T-test are obtained by SPSS programme as shown in the figures below;

Group Statistics

	Result Business	N	Mean	Std. Deviation	Std. Error Mean
Marketing and Sale	New Business Creation & Expanding the Existing Business	29	3.7241	.59140	.10982
	Preparation or Do Nothing	55	3.6182	.62334	.08405

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									Confidence	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Marketing and Sale	Equal variances assumed	.988	.323	.754	82	.453	.10596	.14059	-.17372	.38563
	Equal variances not assumed			.766	59.775	.447	.10596	.13829	-.17069	.38261

Table 4-8: T-test on Marketing and Sale Management Subject

From the SPSS calculations, the F-value = 0.988 and P-value (Sig) = 0.323, therefore P- value is greater than 0.05, so ***"Equal variances assumed"***, at significance level α = 0.05.

The testing value, t= 0.754 and Sig (2-tailed) =0.453, thus P-value is greater than 0.05, ***"Fail to reject H_0"***. We can summarize that there are no relationship in level of Marketing and Sale Management subject with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

Manufacturing and Service Management

The relationship between the participants that already created new business or expand the existing business and the participant that didn't create or expand the business, regarding the satisfaction toward Manufacturing and Service Management subject

The T test is defined as:

H_0: Level of satisfaction in Manufacturing and Service Management subject has no relationship with the participants that already created new

business or expand the existing business or the participant that didn't create or expand the business

H_1: Level of satisfaction in Manufacturing and Service Management subject has relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

The results of T-test are obtained by SPSS programme as shown in the figures below;

Group Statistics

	Result Business	N	Mean	Std. Deviation	Std. Error Mean
Manufacturing and Service Management	New Business Creation & Expanding the Existing Business	29	3.6207	.62185	.11547
	Preparation or Do Nothing	55	3.5455	.60302	.08131

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									Confidence	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Manufacturing and Service Management	Equal variances assumed	.044	.834	.538	82	.592	.07524	.13988	-.20302	.35349
	Equal variances not assumed			.533	55.567	.596	.07524	.14123	-.20773	.35820

Table 4-9: T-test on Manufacturing and Service Management Subject

From the SPSS calculations, the F-value = 0.044 and P-value (Sig) = 0.834, therefore P- value is greater than 0.05, so ***"Equal variances assumed"***, at significance level α = 0.05.

The testing value, t= 0.538 and Sig (2-tailed) =0.592, thus P-value is greater than 0.05, ***"Fail to reject H_0"***. We can summarize that there are no relationship in level of Manufacturing and Service Management subject with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

Financial Management

The relationship between the participants that already created new business or expand the existing business and the participant that didn't create or expand the business, regarding the satisfaction toward Financial Management subject

The T test is defined as:

H_0: Level of satisfaction in Financial Management subject has no relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

H_1: Level of satisfaction in Financial Management subject has relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

The results of T-test are obtained by SPSS programme as shown in the figures below

Group Statistics

	Result Business	N	Mean	Std. Deviation	Std. Error Mean
Financial Management	New Business Creation &	29	3.8621	.44111	.08191
	Preparation or Do Nothing	55	3.6000	.49441	.06667

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									Confidence	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Financial Management	Equal variances assumed	15.231	.000	2.395	82	.019	.26207	.10944	.04436	.47978
	Equal variances not assumed			2.481	63.038	.016	.26207	.10561	.05102	.47312

Table 4-10: T-test on Financial Management Subject

From the SPSS calculations, the F-value = 15.231 and P-value (Sig) = 0.000, therefore P- value is less than 0.05, so ***"Equal variances not assumed"***, at significance level α = 0.05.

The testing value, t= 2.481 and Sig (2-tailed) =0.016, thus P-value is less than 0.05, ***"Accept H_1"***. We can summarize that there are relationship in level of Financial Management subject with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

Attitude Questionnaires Result

Confident

The relationship between the participants that already created new business or expand the existing business and the participant that didn't create or expand the business, regarding the satisfaction toward participant's confident

The T test is defined as:

H_0: Level of satisfaction in participant's confident has no relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

H_1: Level of satisfaction in participant's confident has relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

The results of T-test are obtained by SPSS programme as shown in the figures below;

Group Statistics

	Result Business	N	Mean	Std. Deviation	Std. Error Mean
Confident	New Business Creation & Expanding the Existing Business	29	3.6897	.54139	.10053
	Preparation or Do Nothing	55	3.3455	.47990	.06471

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									Confidence	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Confident	Equal variances assumed	.301	.585	2.989	82	.004	.34420	.11514	.11514	.57326
	Equal variances not assumed			2.879	51.430	.006	.34420	.11956	.10422	.58418

Table 4-11: T-test on Confident Attitude

From the SPSS calculations, the F-value = 0.301 and P-value (Sig) = 0.585, therefore P- value is greater than 0.05, so ***"Equal variances assumed"***, at significance level α = 0.05.

The testing value, t= 2.989 and Sig (2-tailed) =0.004, thus P-value is less than 0.05, ***"Accept H_1"***. We can summarize that there are relationship in level of participant's confident with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

Risk Tolerant

The relationship between the participants that already created new business or expand the existing business and the participant that didn't create or expand the business, regarding the satisfaction toward Risk Tolerant Skill

The T test is defined as:

H_0: Level of satisfaction in Risk Tolerant Skill has no relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

H_1: Level of satisfaction in Risk Tolerant Skill has relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

The results of T-test are obtained by SPSS programme as shown in the figures below;

Group Statistics

	Result Business	N	Mean	Std. Deviation	Std. Error Mean
Risk Tolerant	New Business Creation & Expanding the Existing Business	29	3.4138	.50123	.09308
	Preparation or Do Nothing	55	3.1455	.59061	.07964

Independent Samples Test

		for Equality of		t-test for Equality of Means						
									Confidence	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Risk Tolerant	Equal variances assumed	.452	.503	2.082	82	.040	.26834	.12890	.01191	.52476
	Equal variances not assumed			2.191	65.736	.032	.26834	.12250	.02375	.51293

Table 4-12: T-test on Risk Tolerant Attitude

From the SPSS calculations, the F-value = 0.452 and P-value (Sig) = 0.503, therefore P- value is greater than 0.05, so *"Equal variances assumed"*, at significance level α = 0.05.

The testing value, t= 2.082 and Sig (2-tailed) =0.040, thus P-value is less than 0.05, *"Accept H_1"*. We can summarize that there are relationship in level of Risk Tolerant Skill with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

Self Employed

The relationship between the participants that already created new business or expand the existing business and the participant that didn't create or expand the business, regarding the satisfaction toward Self Employed Attitude

The T test is defined as:

H_0: Level of satisfaction in Self Employed Attitude has no relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

H_1: Level of satisfaction in Self Employed Attitude has relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

The results of T-test are obtained by SPSS programme as shown in the figures below

Group Statistics

	Result Business	N	Mean	Deviation	Mean
Self Employed	New Business Creation & Expanding the Existing Business	29	3.3793	.49380	.09170
	Preparation or Do Nothing	55	3.1636	.71398	.09627

Independent Samples Test

		for Equality of		t-test for Equality of Means						
									Confidence	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Self Employed	Equal variances assumed	.419	.519	1.452	82	.150	.21567	.14854	-.07982	.51117
	Equal variances not assumed			1.622	75.919	.109	.21567	.13295	-.04913	.48048

Table 4-13: T-test on Self Employed Attitude

From the SPSS calculations, the F-value = 0.419 and P-value (Sig) = 0.519, therefore P- value is greater than 0.05, so *"Equal variances assumed"*, at significance level α = 0.05.

The testing value, t= 1.452 and Sig (2-tailed) =0.150, thus P-value is greater than 0.05, *"Fail to reject H_0"*. We can summarize that there are no relationship in level of Self Employed Attitude with the participants that already created new business

or expand the existing business or the participant that didn't create or expand the business

NEC Activities Questionnaires Result

Business Observation

The relationship between the participants that already created new business or expand the existing business and the participant that didn't create or expand the business, regarding the satisfaction toward Business Observation Activity

The T test is defined as:

H_0: Level of satisfaction in Business Observation Activity has no relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

H_1: Level of satisfaction in Business Observation Activity has relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

The results of T-test are obtained by SPSS programme as shown in the figures below;

Group Statistics

	Result Business	N	Mean	Deviation	Mean
Business Observation	New Business Creation & Expanding the Existing Business	29	3.7586	.68947	.12803
	Preparation or Do Nothing	55	3.3818	.68017	.09171

Independent Samples Test

		for Equality of		t-test for Equality of Means						
									Confidence	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Business Observation	Equal variances assumed	.033	.856	2.403	82	.019	.37680	.15682	.06483	.68877
	Equal variances not assumed			2.393	56.407	.020	.37680	.15749	.06136	.69224

Table 4-14: T-test on Business Observation Activity

From the SPSS calculations, the F-value = 0.033 and P-value (Sig) = 0.856, therefore P- value is greater than 0.05, so ***"Equal variances assumed"***, at significance level α = 0.05.

The testing value, t= 2.403 and Sig (2-tailed) =0.019, thus P-value is less than 0.05, ***"Accept H_1"***. We can summarize that there are relationship in level of Business Observation Activity with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

Shop Exhibition

The relationship between the participants that already created new business or expand the existing business and the participant that didn't create or expand the business, regarding the satisfaction toward Shop Exhibition Activity

The T test is defined as:

H_0: Level of satisfaction in Shop Exhibition Activity has no relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

H_1: Level of satisfaction in Shop Exhibition Activity has relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

The results of T-test are obtained by SPSS programme as shown in the figures below;

Group Statistics

	Result Business	N	Mean	Std. Deviation	Std. Error Mean
Shop Exhibition	New Business Creation & Expanding the Existing Business	29	3.1724	.60172	.11174
	Preparation or Do Nothing	55	3.3091	.76673	.10339

Independent Samples Test

		for Equality of		t-test for Equality of Means						
									Confidence	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Shop Exhibition	Equal variances assumed	3.893	.052	-.833	82	.407	-.13668	.16401	-.46295	.18959
	Equal variances not assumed			-.898	69.900	.372	-.13668	.15223	-.44030	.16694

Table 4-15: T-test on Shop Exhibition Activity

From the SPSS calculations, the F-value = 3.893 and P-value (Sig) = 0.052, therefore P- value is greater than 0.05, so *"Equal variances assumed"*, at significance level α = 0.05.

The testing value, t= -0.833 and Sig (2-tailed) =0.407, thus P-value is greater than 0.05, *"Fail to reject H_0"*. We can summarize that there are no relationship in level of Shop Exhibition Activity with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

Group Work

The relationship between the participants that already created new business or expand the existing business and the participant that didn't create or expand the business, regarding the satisfaction toward Group Work Activity

The T test is defined as:

H_0: Level of satisfaction in Group Work Activity has no relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

H_1: Level of satisfaction in Group Work Activity has relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

The results of T-test are obtained by SPSS programme as shown in the figures below;

Group Statistics

	Result Business	N	Mean	Std. Deviation	Std. Error Mean
Group Work	New Business Creation & Expanding the Existing Business	29	3.6207	.67685	.12569
	Preparation or Do Nothing	55	3.4727	.60414	.08146

Independent Samples Test

		for Equality of		t-test for Equality of Means						
									Confidence	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Group Work	Equal variances assumed	.688	.409	1.024	82	.309	.14796	.14456	-.13961	.43553
	Equal variances not assumed			.988	51.731	.328	.14796	.14978	-.15263	.44855

Table 4-16: T-test on Group Work Activity

From the SPSS calculations, the F-value = 0.688 and P-value (Sig) = 0.409, therefore P- value is greater than 0.05, so ***"Equal variances assumed"***, at significance level α = 0.05.

The testing value, t= 1.024 and Sig (2-tailed) =0.309, thus P-value is greater than 0.05, ***"Fail to reject H_0"***. We can summarize that there are no relationship in level of Group Work Activity with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

Individual Consulting

The relationship between the participants that already created new business or expand the existing business and the participant that didn't create or expand the business, regarding the satisfaction toward Individual Consulting Activity

The T test is defined as:

H_0: Level of satisfaction in Individual Consulting Activity has no relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

H_1: Level of satisfaction in Individual Consulting Activity has relationship with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

The results of T-test are obtained by SPSS programme as shown in the figures below;

Group Statistics

	Result Business	N	Mean	Std. Deviation	Std. Error Mean
Individual Consulting	New Business Creation &	29	4.1379	.44111	.08191
	Preparation or Do Nothing	55	3.7636	.63723	.08592

Independent Samples Test

		for Equality of		t-test for Equality of Means						
									Confidence	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Individual Consulting	Equal variances assumed	8.693	.004	2.823	82	.006	.37429	.13260	.11052	.63807
	Equal variances not assumed			3.153	75.882	.002	.37429	.11871	.13785	.61074

Table 4-17: T-test on Individual Consulting Activity

From the SPSS calculations, the F-value = 8.693 and P-value (Sig) = 0.004, therefore P- value is less than 0.05, so *"Equal variances not assumed"*, at significance level α = 0.05.

The testing value, t= 3.153 and Sig (2-tailed) =0.02, thus P-value is less than 0.05, *"Accept H_1"*. We can summarize that there are relationship in level of Individual Consulting Activity with the participants that already created new business or expand the existing business or the participant that didn't create or expand the business

The close ended questionnaire result summary is shown in the table below;

Close Ended Questionnaires Result		
No.	Topics	Relationship
1	Business Knowledge	
1.1	General Business Management	No
1.2	Marketing and Sale Management	No
1.3	Manufacturing and Service Management	No
1.4	Financial Management	Yes
2	Attitude	
2.1	Confident	Yes
2.2	Risk Tolerant	Yes
2.3	Self Employed	No
3	Activities	
3.1	Business Observation	Yes
3.2	Shop Exhibition	No
3.3	Group Work	No
3.4	Individual Consulting	Yes

Table 4-18: Close Ended Questionnaires Result

The results of hypothesis test shown that there are some relationships, regarding the course subject, attitudes and activities satisfactory, between the participants that already created new business or expand the existing business and the participant that didn't create or expand the business.

Only the finance and accounting knowledge subjects that have an effect to the business creation, thus the researcher can summarize that new entrepreneurs are concern more on the attitude and activities (in these case are experience sharing from the experts and business observation opportunities), toward business creation or expansion.

Second Questionnaire: Open Ended Questionnaires

After the teams have summarized the close ended questionnaire results, the close ended questionnaire aimed to analyze the significant different between the participants that created or expanded the business and the participants that didn't created or expanded the business. However the team also need the information and ideas from 29 successful participants regarding the NEC program progression, suggestion and improvement ideas in order to design the better course module that provide the necessary knowledge and technique for create new business or expand the existing business. Therefore, the team uses the telephone interview with the open ended questionnaire to ask the successful participants. These questionnaires will focus only the highest or lowest ranking question and also the improvement idea toward the program performance in the successful participant point of view or experience.

The interview and open ended questionnaire result summary is shown in the table below;

Open Ended Questionnaire Result	
General Business Management	1. Need more time and schedule from government experts
	2. More practical handout and information channel
	3. Separated class between Academic Background and Non-academic Background
	4. Too much Academic aspect - Need more application, concerning SMEs positioning and case study
	5. Course structure should be more practical, required business plan framework
Marketing and Sale	1. Focusing more on 4P and SWOT analysis
	2. Need more practical case study and document
	3. Market Trend Analysis and additional consultant
Manufacturing and Service Management	1. Need more case study
	2. Require more hand out and document for further study

Financial Management	1. Need more time and Schedule for accounting
	2. Accounting Excel simulation should be applied with participant business
	3. Participant financial analysis should be list as the significant issue
Confident/ Risk Tolerant/ Self Employed and Independent	1. More experience sharing for experts and business owner
	2. Should have some room for applying the knowledge with the participant business and give some analysis and discussion with the expert
	3. Analysis tool or framework to increase the participant confident is required
	4. Business plan presentation should be applied to the bank process
	5. Experience sharing from successful business owner
Business Observation	1. Manufacturing business observation does not satisfy all type of participant's business
	2. Require more specific observation for all kind of participant's business
Shop Exhibition	1. Provide channel to promote participant's business (Exhibition separated by type of business)
	2. Yearly exhibition for NEC network
	3. Thailand NEC business contest
Group Work	1. Group work should be related to the participant business
	2. Need more categorize of the participant in order to optimize the benefit of group work and networking
	3. Network sharing and cluster organization
Individual Consulting	1. Need more time for consulting
	2. Require specific expertise in each type of business

Table 4-19: Open Ended Questionnaires Result

4.1.3 Factor Analysis and Objectives Deployment

In order to analyze the factors from open ended questionnaire, there is an issue that the researcher would like to list up. During the participative observation, the researcher saw that even though, all the participants might have the same final target as “create or expand the business” but at their current situation or readiness, they might have the different objectives.

In this part, according to the dynamic factors in NEC project which the project team might or might not be able to control the input, participant’s background since the Industrial Promotion Department has the policy to accept every person that might have an ability to create or expand the business. There are five main backgrounds;

1. Fresh Graduated
2. Employee
3. Unemployed
4. Business Heirs
5. Business Owner (Least than 3 years)

In which, actually they have the same goal “To Create or Expand the Business” as the NEC objective, thus they might have the same final target or destination but in the participative point of view, the researcher believed that currently they have totally different way to reach the final target, according to their several backgrounds and their current abilities.

For example, the fresh graduated also have several way to reach the final target since some of them might just recently graduated in many filed like Literature of Art, Engineering, Scientist, and Agricultural so they never know the way to do the

business but they have more creativity and energetic, thus they join this project in order to get the knowledge of the proper way to do the business. But some of them might study in the business filed like accounting and business management, thus they will join this project with the expectation in the experience sharing from the expert and consulting.

The other participant groups also having the same issue, since they have varied educational background. Therefore in order to design the NEC process to be more efficient, considering only the NEC project objective might not enough.

Management by Objective or MBO will be used in order to strengthen the overall performance. MBO relies on the defining of objectives for each participant and then to compare and to direct their target against the objectives which have been set. It aims to increase the performance of the project by matching NEC project goals with the objectives of participants. MBO includes continuous tracking of the processes and providing feedback to reach the objectives.

NEC Program Objectives regarding the Industrial Promotion Department are listed below;

1. To support the recently graduated, employees and unemployed who have good basic education, and potential to become new entrepreneurs.

2. To create the new enterprise as a source of new employment in the economy of Thailand.

3. To strengthen the small enterprise that was in the established period (< 3 years) to be able to survive and maintain its employment.

4. To prepare the "Business heirs" to inherit the business. Be able to continue the business and maintain the employment. And create opportunities for further business expansion in the future.

According to the interview during participative observation by researcher, the list below is the participant's objectives separated by factors;

1. To learn how to do the business
2. To get knowledge of business management
3. To Improve and strengthen the existing business with the systematic knowledge
4. To get the business network or friends
5. To get the motivation and creativity in creating business
6. To learn the case study from others business
7. To get more experience sharing from successful entrepreneurs
8. To consult with the experts

The participant's objective can be group into four major groups;

1. Knowledge: I want to learn business philosophy and application
2. Experience: I want to get more experience or motivation from experts
3. Business Network: I want to have business network or business friends
4. Creativity: I want to have some idea toward my business

Then with the purpose to increase the performance of the NEC project, the affinity diagram will be used in order to categorize the participant's objectives with the improvement ideas that acquired from the open ended questionnaire results.

First Level Participant Objectives	Second Level Grouping and Reworded Participant Objective regarding the questionnaire results	Third Level Suggested Knowledge, Improvement and Skills to be required
Knowledge To learn business philosophy and knowledge	Fundamental knowledge	Academic and Non-academic Class background
		Business Plan Framework
	Practical knowledge	Intensive Business Analysis Tool Subjects
		Famous market Trend Analysis
		Practical Excel Simulation
		Participant's business financial Analysis
	Time and Document	More Time
		More Case study
		More SMEs Case Study
		More Academic Document and Handout
		Further information Channel
Experience To get more experience or motivation from expert	Case Study	Practical Assignment
		Business Framework
		Specific Guest Speaker
	Business observation	Specific Business Observation
		In trend Industry observation
		Separated the observation by type of business
Networking To have business network or business friends	Business Network	Business Channel
		NEC Exhibition and contest
	Friends (NEC Network)	Specific Group work
		NEC Business Network

Creativity I want to have some idea toward my business	Value Added Consulting	Business Specific Expertise

Table 4-20: Improvement Ideas Deployment by Affinity Diagram and MBO

After the factors or improvement ideas were categorized into the group based on participant's objectives, the next step will be the factors deployment in order to analyze the influences factors that have significant effect toward NEC program performance.

4.2 Quality Function Deployment

After the product specification is obtained from the previous process, then the Quality Function Deployment is used to systematically express the relationship between participant requirements and the program course structure. Then the importance of program course structure can be derived by employing the relationship matrix and the importance of participant requirements

		Knowledge										Experience				Networking				Crea -tivity	
		Fundamental knowledge		Practical knowledge				Time and Document				Case Study			Business observation	Business Network		Friends (NEC Network)		Value Added Consulting	
		Academic and Non-acadamic Class background	Business Plan Framework	Intensive Business Analysis Tool Subjects	Recent Market Trend Analysis	Practical Excel Simulation	Participant's Business Asisgnment in Financial	More Time	More Case Study (SMEs)	More Academic Document and Handout	Further information Channel	Practical Assignment or Workshop	Business Plan Framework	Specific Guest Speaker	Specific Business Observation	Business Channel	NEC Exhibition and contest	Specific Group work	NEC Business Network	Business Specific Expertise	
Basic Knowledge	General Business Management	9	9	3	3	1	3	9	9	9	9	3	9	9	3	3	3	3	9	9	3.95
	Marketing and Sale	9	9	9	9	1	9	9	9	9	9	9	9	9	9	3	3	9	9	9	3.65
	Manufacturing and Service Management	9	9	9	9	1	9	9	9	9	9	9	9	9	9	3	3	9	9	9	3.57
	Financial Management	9	9	9	3	9	9	9	9	9	9	9	9	9	9	3	3	9	9	9	3.69
Attitude	**Confident**	9	9	9	9	3	9	9	9	3	3	9	9	3	9	9	9	9	9	9	3.46
	Risk Tolerant (More Risk Taker and Investr	3	3	9	9	3	9	9	3	3	3	9	9	9	9	9	9	9	9	9	3.24
	Self Employed and Independent	3	3	3	3	3	3	9	3	3	3	9	9	3	9	9	9	9	9	3	3.24
Activities	**Business Observation**	3	1	1	9	1	1	9	3	3	1	3	3	3	9	1	3	9	9	1	3.51
	Shop Exibition	1	1	3	3	1	3	1	1	1	1	3	1	1	3	9	9	9	9	1	3.26
	Group Work	9	3	1	3	1	3	9	3	3	9	3	3	1	3	3	3	9	3	3	3.52
	Individual Consulting	3	9	9	3	9	9	9	3	3	3	9	9	3	3	3	3	3	9	9	3.89
	Rating	241.6	236.8	232.0	221.6	119.5	239.0	**324.9**	220.5	199.7	213.8	**265.5**	**282.7**	212.1	**263.2**	189.2	196.2	**303.9**	**329.9**	**256.2**	
	Percentage	5.0%	4.9%	4.8%	4.6%	2.5%	5.0%	6.8%	4.6%	4.2%	4.4%	5.5%	5.9%	4.4%	5.5%	3.9%	4.1%	6.3%	6.9%	5.3%	

Four numbers are used to represent the relationship;
0 = not relative, 1 = slightly relative, 3 = very relative, 9 = most relative

Table 4-21: Quality Function Deployment Result

Result of Quality Function Deployment

The analysis of Quality Function Deployment has shown that there are some factors that have the most influence on the participant needs. Most of them are in the experience and networking parts, the others two from time schedule and document, and consulting. The influence or improvement ideas are NEC business network, more time, specific group work, Business Plan Framework, Practical Assignment or Workshop, Specific Business Observation, and Specific Business Consultant respectively. The others that participant need are they ask for increase the time in the subject that really important and also the quality of hand out and further information channel.

No.	Improvement issues	Points	%
1	NEC Business Network	329.9	6.9%
2	More Time	324.9	6.8%
3	Specific Group work	303.9	6.3%
4	Business Plan Framework	282.7	5.9%
5	Practical Assignment or Workshop	265.5	5.5%
6	Specific Business Observation	263.2	5.5%
7	Business Specific Expertise	256.2	5.3%

Table 4-22: Quality Function Deployment Summary

4.3 Concept Generation and Selection

In this section, after the influence factors that have effected toward NEC program performance were found, the concepts of new course module must be design regarding the influence factors and participative observation experience. Then the concept selection process by evaluation matrix will be proceeded in order to select the best concept for design new course module.

4.3.1 Concept Generation by Extracting the Meaning of Improvement Ideas

First, several concepts of NEC Course Structure are generated based on the technical specifications from QFD diagram, participant interview and participative observation of researcher.

Concept 1: Specific Business Course Structure

NEC Course Structure Concept 1 was developed based on the QFD results and interview data that most of the participants required more specific case study, group work, business consulting, and practical assignment and increasing of time schedule. Regarding to the participative observation, the researcher have an explanation for those entire requirement.

Why did they do request these things? They do request these because of the variety of the participant's business, which make the advisors or guest speakers, cannot satisfy all the participants. Therefore in order to increase the NEC project efficiency toward the successfulness of entrepreneur and the influence factors, the specific business course structure will be developed.

Actually, for one educational year, NEC project will have separated the participant into three groups according to the registration round or period. Thus, the idea of this concept is to use these three separated group to be three separated business course structure group, Manufacturing, Service and Trading Group. In which can be more precise in term of the subject selection and course design process which can satisfy specific participant requirement.

They do require more practical assignment because in some subject, the advisor gives the assignment in the manufacturing industry based to the participants that interesting in service industry. The same issues go for the business observation activities that currently are two manufacturing factories observation which cannot satisfy all the participant objective or interest.

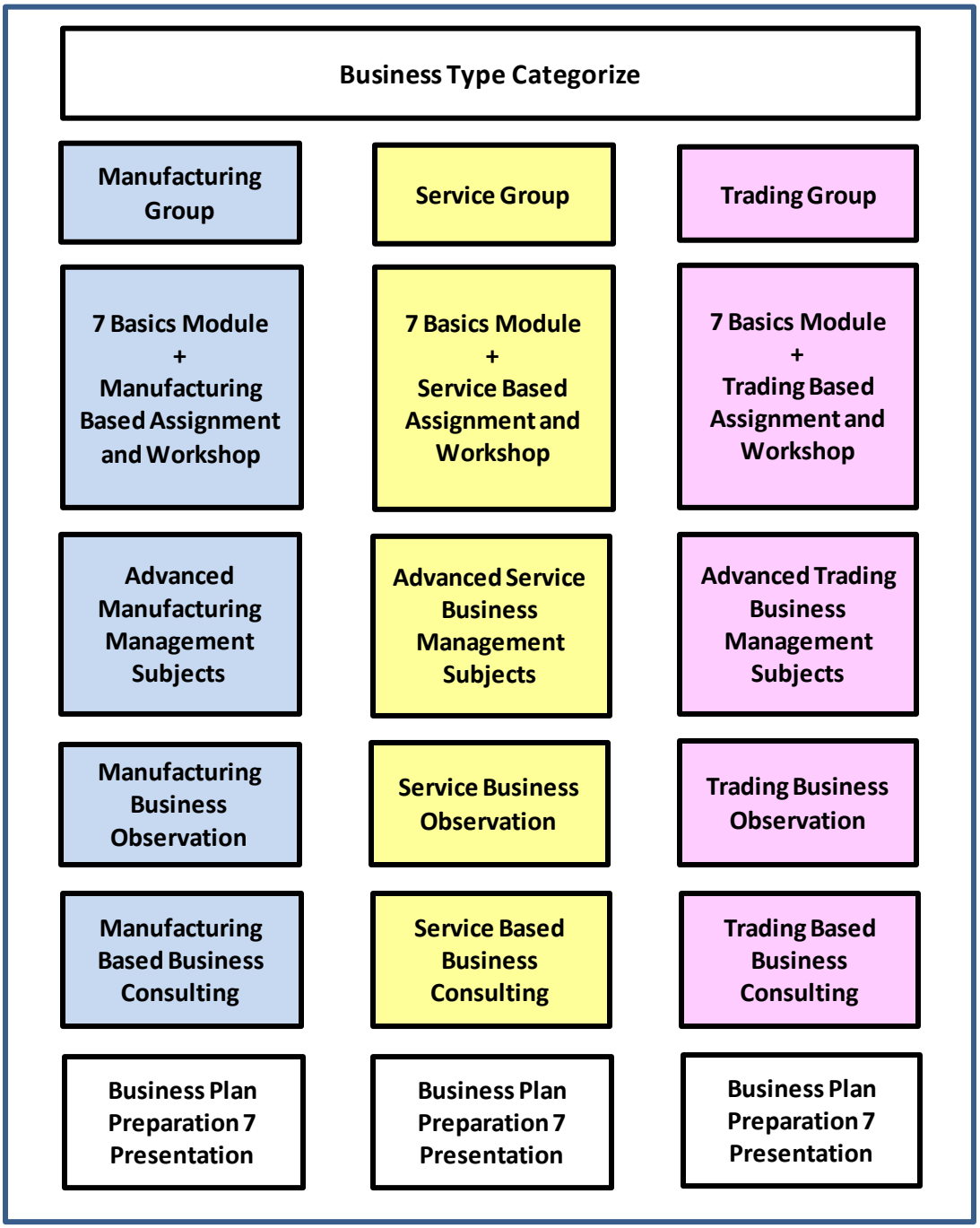

Figure 4-12: Concept 1, Specific Business Course Structure

Concept 2: Business Creation Group and Business Expansion Group

Regarding to the dynamic input, the participants, in each education year have different background, business type and the target. The researcher would like to create the concept that separated the participants' target into two objectives, first one is the new business creation and the second is business expansion.

The group can be selected based on the participant's background, status, or the business target.

Business Creation Group;

- Fresh Graduated
- Employee
- Vacant person
- Business Heir (Who really want to create new business except from their family business)

Business Expansion Group;

- Business Owner (<3 Years)
- Business Heir

According to the MBO, each participant may have their own objectives or targets. In this case between these two groups, they also have different objectives and targets. Thus in order to improve the NEC project efficiency, why not separated the course into two specific groups in order to serve the different objectives?

This concept will make the clear in term of subject direction that the instructor can be focus on the knowledge and case study to response to the participant specific needs regarding the two separated groups.

For example; Business Creation group would get more time in the legal structure or registration process in new business creation while the business expansion group can be focus on the global opportunities analysis. The same aspect go for the specific practical assignment and case study as well.

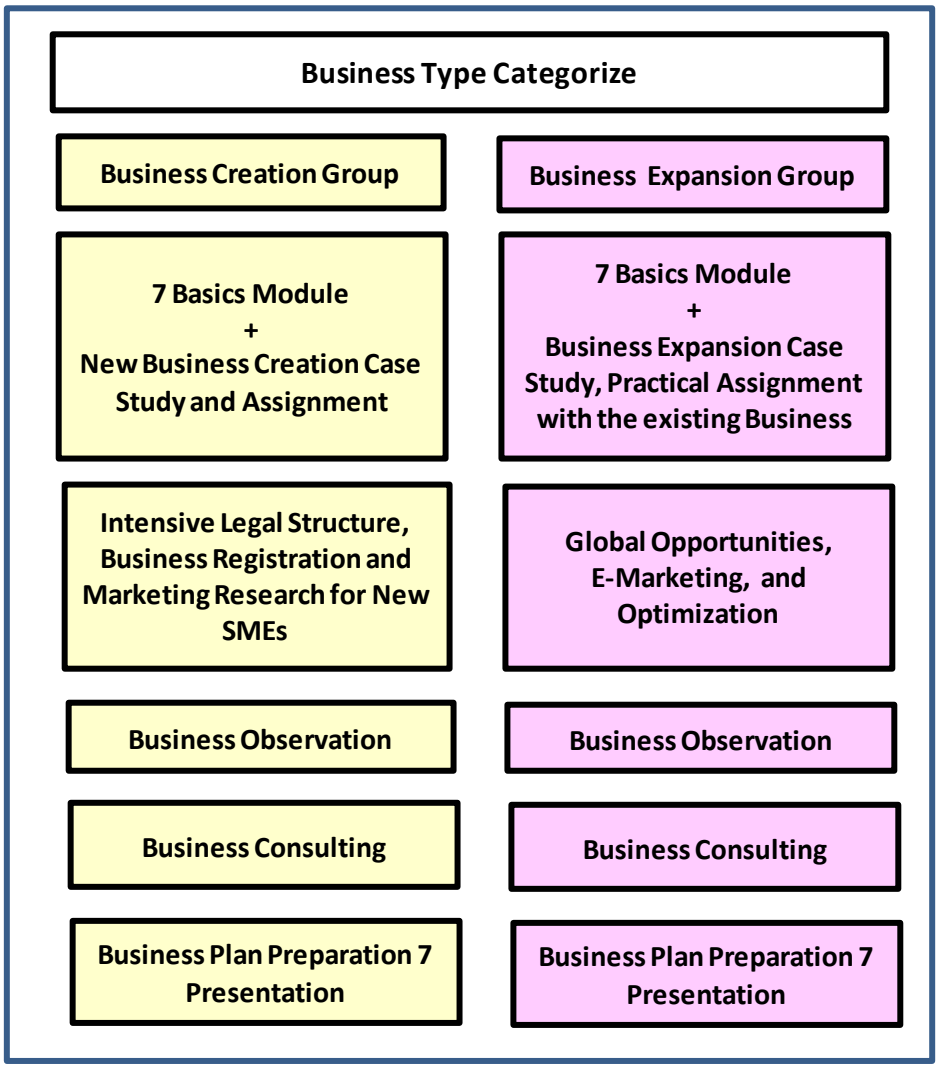

Figure 4-13: Concept 2, Business Creation Group and Business Expansion Group

Concept 3: Phrase I and II Course Structure

Concept 3 was developed based on the business network creation idea, specific course work, Practical Assignment, business observation and also the business expertise.

The entire course structure will be divided into two phrases which the first phrase will be used to training the general knowledge, group work, and group work business plan presentation and develop and strengthen the business network among the section. The second phrase will used similar idea as in concept 1 in order to increase the efficiency of the phrase II NEC process.

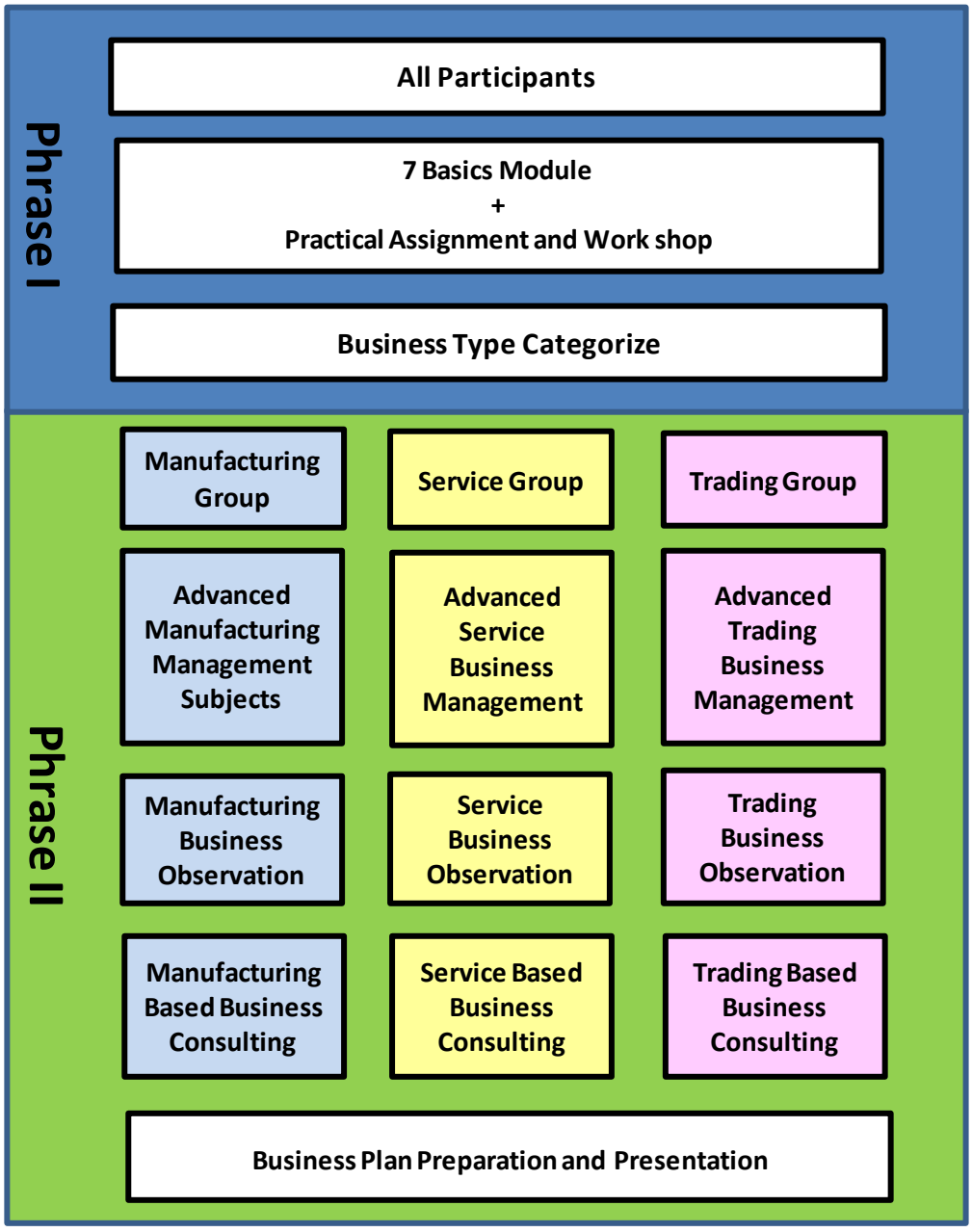

Figure 4-14: Concept 3, Phrase I and II Course Structure

4.3.2 Concept Selection

		Importance Rating	Conceptual Design		
			1	2	3
Basic Knowledge	General Business Management	3.95	0	+	0
	Marketing and Sale	3.65	+	+	+
	Manufacturing and Service Management	3.57	+	+	+
	Financial Management	3.69	0	+	0
Attitude	Confident	3.46	+	0	+
	Risk Tolerant	3.24	0	0	0
	Self Employed and Independent□	3.24	+	-	+
Activities	Business Observation	3.51	+	0	+
	Shop Exibition	3.26	-	-	+
	Group Work	3.52	+	-	+
	Individual Consulting	3.89	+	+	+
Total Positive Points (+)			24.9	18.8	28.1
Total Negative Points (-)			3.3	10.0	0.0
Total Importance of Design			21.6	8.7	28.1

Table 4-23: Concept Selection by Evaluation Matrix

The concept selection matrix shown above lists the course structure characteristics down the left side of the matrix. The Course Structure characteristics are derived from the QFD product planning matrix. The concept alternatives are listed across the top. Each alternative is rated by NEC project leader and expert from department of Industrial Promotion Center, on how well it meets the course structure characteristics or requirements

From the result of evaluation matrix, it can be seen that the “Concept 3” concept has earned the highest score. Due to the flexibility and possibility of the concept that can generate positive respond to the course structure characteristic in all three parts, basic knowledge, attitude and activities. Therefore, it is decided to use this concept as the main concept to develop the NEC course structure.

4.4 Course Structure Design Development

In this part, the influence factors from QFD diagram, participative observation experience and interview comments will be used regarding the concept 3

direction. The seventh influences factors from QFD will be used to design the detail course structure of NEC program which were described below;

NEC Business Network:

Regarding to the participative observation and interview, most of the participant expect that they would have more friends and the business network in order to increase their business capability in term of business channel, purchasing, expanding and also for friendship. Currently, there are no meetings or activities toward the participant between educational years. And there are also have no activities between the different group sections within the same education year.

In order to create the NEC Business Network, the project team must work together with the Industrial Promotion Center in term of the Network creation not only between the different group section in the same education or different education year but it should be expand to the create the network with the other NEC held at other places. The NEC exhibition should be established yearly in term of product and service exhibition and business contest, in order to build up the Thailand New Entrepreneur Creation Network.

Increase Time Schedule:

Most of participants ask for increase more time in the government expertise subject, accounting, and others technical subject which directly impact to their business. In the other hand some participant that these subjects have nothing to do with their business, totally did not mention anything concerning the time schedule.

Thus in order to enhance the course structure efficiency, the course design process must be adapted regarding the group of participant, business type and participant background. Moreover, the time schedule for significant subjects and in trend topics or advance topics must be increase in order to provide more knowledge and satisfy the participant needs or requirements.

Specific Group Work:

Currently the group work is organized by the participants themselves, in member grouping and also the product selection. In the researcher point of view in the participative observation, the group work somehow given less beneficial knowledge to participant except the friendship among the participants, regarding to the limitation of time, opened wide product selection and the real selling rule, most of the group work will be in the trading business. Thus most of the group work product will be snack, food, cloth and things that can sell inside the classroom. The real selling rule and limitation of time have given the participant to choose the product that easily in term of transportation (selling in the classroom) and quickly access.

This type of group work might be good in term of increasing the friendship within the classroom but it have less beneficial toward most of participant's business. The group work should have more beneficial toward participant's business. The limitation of time might be difficult to solve but the real selling rule and group member selection can be improved together with the group work business process.

- Group Member Selection

Thus the advisor or NEC project leader must be the one that select the group member. There are two way to select the appropriate member in the business group work activity.

1. Direct way: Select the similar business type and background to be in the same group

2. Diversify way: Design the group background structure which contained the different background in the indicated proportional, for example, in group should be consisted of one engineer, one accountant and two more people in any types.

The group member selection will be effected a lot in term of the beneficial to the participants themselves. They could be sharing the idea toward the same type of business.

- Group Work Scope or Limits

The group work scope should not be limited by the real selling rule, because this rule will be limited the selected product in term of transportation (large size product might be difficult to transport to selling in the classroom) and quickly access by the customer or participants in the class room. Therefore in the researcher's idea, the group work scope should be focus on the product concept, strategic planning, financial analysis and feasibility study then resulting in the group work business plan presentation in the classroom. In which the product might be select from one of the group member business or creating the new one that might be hit in the current market trend.

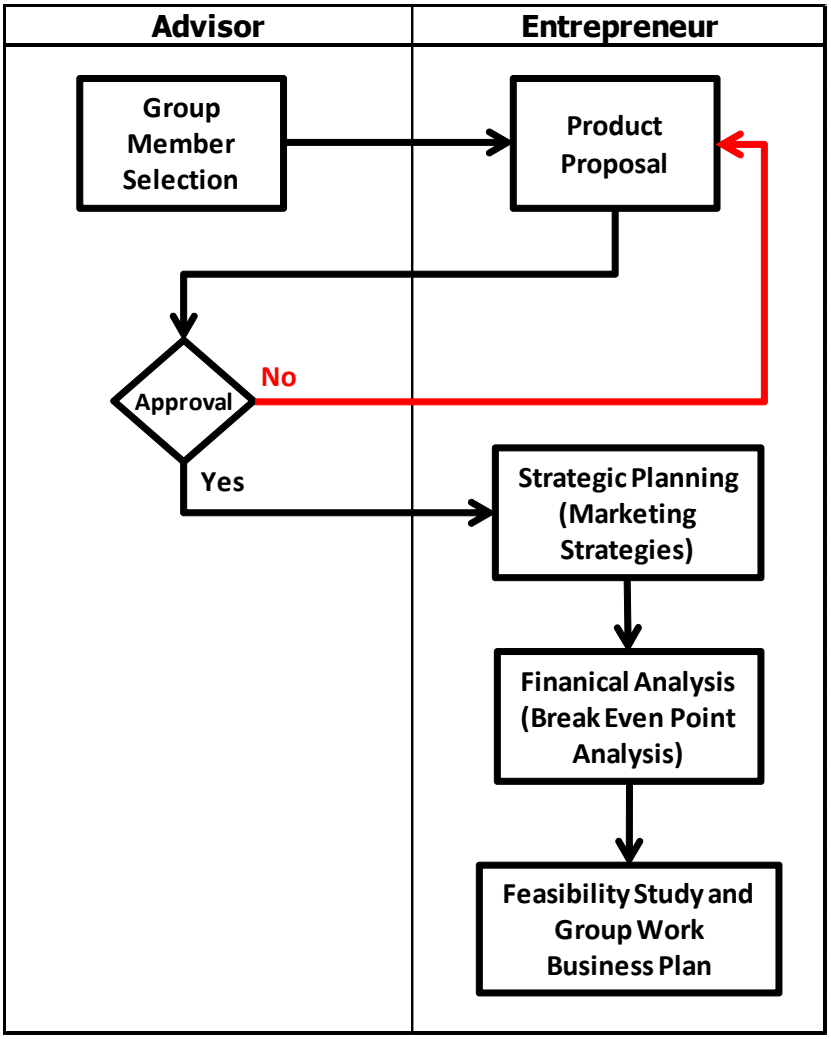

Figure 4-15: Group Work Flow Chart

Intensive Business Plan Framework:

According to the different working experience, academic background and business selection, the intensive business plan consulting will be required in order to help the participant applying the business plan that can pass through the banking process. The business plan study must be divided into two sections, the first one is the group work business plan presentation and the second part is individual business plan presentation. The group work business plan presentation aimed to give the participant to be familiar with business plan presentation and know the step to prepare the business plan before do the individual business plan in phase II.

And in phase II with the purpose to increase the important and intense business plan, the NEC, Department of Industrial Promotion Center will cooperate with the financial associate in this case is the Bank of Ayutthaya, in order to present the business plan for bank loan, if the participant can pass thought it, the Bank of Ayutthaya will offer the bank loan to them. This step will be prepared only for some participants that ready and well prepare.

Practical Assignment or Workshop:

In the second phase of study, the practical assignment or workshop must be input more into the course structure. Furthermore with the separated business classroom in second phase, the practical assignment and workshop that aiming specific business must be added in order to improve the understanding and practical knowledge to participants. For example in the intensive financial and accounting or telecommunication subjects, the instructor should prepare the practical workshop or individual assignment using the participant business as the assignment topic which the participant can be applied in their business.

Specific Business Observation:

Most of the participant think that the business observation is good in order to see how the successful entrepreneur doing the business and also have an opportunities to get experiences sharing from the real entrepreneurs. But the business observation in the manufacturing industry can not satisfy all of the participant's needs.

Therefore, with the concept 3 that separated class regarding the business types in phase II, the separated business observation will be launch regarding the manufacturing, trading and service industry class room.

Specific Business Expertise Consultant:

Most participants do ask for more consulting time and the specific expertise. Since the huge varieties in the participant business, they do require the consultants that have some knowhow or experience regarding their specific industry.

In this case, the NEC network might be able to reduce the gap in the participant requirement and NEC limitation of recourses. The consultants might be the NEC participant in the previous year or some expert in corporation with the Industrial Promotion Center department and Research Unit for Industrial Management and Technology, Chulalongkorn University.

In additional the researcher also list up the learning objectives from the successful participants that created or expanded the business. The significant learning points that would be required in order to create new business and expand the existing business, there are three main learning points;

- How to find the market?
- How to acquire the financial investment?
- How to get the operation technique?

These are the learning objectives from 29 successful participants which they must know in order to create or expand the business.

Therefore the design development use the concept 3 integral with the key influence factors and participant's learning objectives to develop the suggested course module for NEC program,

4.5 Suggested NEC Course Module

The suggested course module will be separated into three main sections;

- Phase I: 7 Basic Course Modules
- Phase II: Practical Course Modules
    a. Specific Business Type Course Modules
        - Manufacturing Industry Group
        - Service Industry Group
        - Trading Industry Group
    b. Main Practical Course Modules
- Business Consulting, Business Observation and Business Plan Preparation

The detail course module contents are shown in the following tables;

Phase I: 7 Basic Course Modules			
No.	**Module Lists**	**Method**	**Time (Hrs)**
1	**Government Policy to Promote the SMEs**		
1.1	The Role of the Department of Industrial Promotion and Development of SMEs.	Lecture	2
1.2	Industrial Promotion Approach	Lecture	1
2	**Orientation to New Entrepreneur Preparation and Analysis of Business Investment Opportunities.**		
2.1	Orientation and Preparation	Lecture	2
2.2	Orientation Activity	Activity	1
2.3	Entrepreneur Preparation	Lecture	2
2.4	Analysis of Buiness Opportunities	Lecture and Practice	3
3	**Marketing Strategy and Service / Sales techniques**		
3.1	Marketing Strategies for New Business	Lecture	5
3.2	Marketing Workshop	Workshop	3
3.3	Sale Techniques and Advertisement for New Business	Lecture	2
3.4	E-Marketing	Lecture	2
3.5	Sale Techniques Workshop	Workshop	3
4	**Manufacturing and Service Management**		
4.1	Fundamental to Production Management	Lecture	3
4.2	Quality Management	Lecture	3
5	**Organizational and Human Resource Management, and Knowledge of Business Laws**		
5.1	Business Ethics in Organizational and Human Resource Management	Lecture	2
5.2	Legal Structure for New Business	Lecture	5
6	**Financial Management the Analysis of Financial Figures.**		
6.1	Accounting Principle	Lecture	5
6.2	Accounting Workshop	Workshop	3
6.3	Cost Accounting	Lecture and Practice	2
6.4	Financial Analysis	Lecture and Practice	5
6.5	Financial workshop	Workshop	3
7	**Preparation of Individual Investment Plans and Guidelines for Preparing the Business Creation or Expansion.**		
7.1	Individual Business plan preparation	Lecture and Practice	1
7.2	Business Creation or Expansion Preparation	Lecture	2

Table 4-24: Suggested 7 Basic Course Modules

Phase II: Specific Business Type Course Modules			
No.	**Module Lists**	**Method**	**Time (Hrs)**
8	**Phrase II: Manufacturing Industry Group**		
8.1	Production Management Techniques	Lecture and Practice	3
8.2	Manufacturing Workshop	Workshop	2
8.3	Quality Guarantee in Manufacturing Industry	Lecture and Practice	2
8.4	Information and Communication Technologies for SMEs in Manufacturing Business	Lecture	3
8.5	Management of Manufacturing and Purchasing for SMEs	Lecture	3
9	**Phrase II: Service Industry Group**		
9.1	Theory and Practice of Service Business Management.	Lecture and Practice	5
9.2	Quality Management in Service Industry	Lecture and Practice	2
9.3	Information and Communication Technologies for SMEs in Service Business	Lecture	3
9.4	Health Care Business Opportunity in Thailand	Lecture	2
10	**Phrase II: Trading Industry Group**		
10.1	Theory and practice of Trading business management.	Lecture and Practice	5
10.2	Quality Management in Trading Industry	Lecture and Practice	2
10.3	Information and Communication Technologies for SMEs in Trading Business	Lecture	3
10.4	Stock Management in Trading Business	Lecture and Practice	2

Table 4-25: Suggested Specific Business Type Course Modules

Phase II: Practical Course Modules			
11	**Phrase II: Advance Business Management for SMEs Thai**		
11.1	Financial Analysis for SMEs	Lecture	3
11.2	Financial Analysisand Financial Statement Preparation for SMEs	Lecture and Practice	9
11.3	Financial Investment	Practice	2
11.4	Business Network Strategies and Negotiation Techniques	Lecture	4
11.5	Global Opportunity for SMEs	Lecture	2
11.6	A Systematic Way to Create Business Ideas	Lecture	6
11.7	Business Project Management	Lecture	2
11.8	How to Prepare a Business Plan	Practice	4
12	**Phrase II: Advance Topics for SMEs Thai**		
12.1	Advanced Topic I	Lecture	2
12.2	Advanced Topic II	Practice	4

Table 4-26: Suggested Main Practical Course Modules

Business Consulting and Business Plan Preparation			
13	**Business Consulting to Support the Business Creation or Expansion**	Activity	60
14	**Business Observation**	Activity	6
15	**Business Plan Presentation**	Presentation	12

Table 4-27: Suggested Business Consulting, Business Observation and Business Preparation Course Module

4.6 Course Structure Discussion

Current NEC course compared to the Suggested NEC Course Contents

Actually the NEC course contents was developed regarding the Industrial Promotion Course guideline, thus in this thesis the course structure evaluation will be discussed based on the comparison between the NEC course content and suggested Course content.

NEC Course Contents versus Suggested Course Contents

Phrase I: General Business Course

Module 1: Government Policy to Promote the SMEs

NEC Course Content			
No.	**Module Lists**	**Method**	**Time (Hrs)**
1	**Government Policy to Promote the SMEs**		
1.1	Industrial Promotion Policy and Measure	Lecture	2
1.2	Industrial Promotion Approach	Lecture	1
Suggested Course Content			
No.	**Module Lists**	**Method**	**Time (Hrs)**
1	**Government Policy to Promote the SMEs**		
1.1	The Role of the Department of Industrial Promotion and Development of SMEs.	Lecture	2
1.2	Industrial Promotion Approach	Lecture	1

Table 4-28: Module 1, Government Policy to Promote the SMEs

There are no major different in this module regarding to the reason that the guest speakers will be the government officer from Industrial Promotion Center

Module 2: Orientation to New Entrepreneur Preparation and Analysis of the Business Investment

NEC Course Content			
2	**Orientation to New Entrepreneur Preparation and Analysis of Business Investment Opportunities.**		
2.1	Orientation and Preparation	Lecture	2
2.2	Orientation Activity	Activity	1
2.3	Entrepreneur Preparation	Lecture	1
2.4	Analysis of Buiness Opportunities	Lecture and Practice	2
Suggested Course Content			
2	**Orientation to New Entrepreneur Preparation and Analysis of Business Investment Opportunities.**		
2.1	Orientation and Preparation	Lecture	2
2.2	Orientation Activity	Activity	1
2.3	Entrepreneur Preparation	Lecture	2
2.4	Analysis of Buiness Opportunities	Lecture and Practice	3

Table 4-29: Module 2, Orientation to New Entrepreneur Preparation and Analysis of the Business Investment

According to the interview and participant observation, there are many comments concerning the extending schedule in the business opportunities analysis. Regarding the government course contents that spend almost 12 hours in this section,

It shows that this section is very important for new entrepreneurs in Industrial Promotion centre and participants point of view. Therefore the business opportunities evaluation and analysis time schedule will be increased to three hours and one more lecture hour for new entrepreneur preparation topic.

Module 3: Marketing Strategies and Service / Sale Techniques

NEC Course Content			
3	**Marketing Strategy and Service / Sales techniques**		
3.1	Marketing Strategies for New Business	Lecture	5
3.2	Marketing Workshop	Workshop	2
3.3	Sale Tecniques and Advertisement	Lecture	2
3.4	E-Marketing	Lecture	2
3.5	Sale Techniques Workshop	Workshop	2
Suggested Course Content			
3	**Marketing Strategy and Service / Sales techniques**		
3.1	Marketing Strategies for New Business	Lecture	5
3.2	Marketing Workshop	Workshop	3
3.3	Sale Techniques and Advertisement for New Business	Lecture	2
3.4	E-Marketing	Lecture	2
3.5	Sale Techniques Workshop	Workshop	3

Table 4-30: Module 3, Marketing Strategies and Service / Sale Techniques

From researcher opinion, this section have a good instructor and course content but its time schedule might be a bit less compared to its significant in view of entrepreneur. Thus the increase time in the workshop hours would be done well for this section.

Module 4: Manufacturing and Service Management

NEC Course Content			
4	**Manufacturing and Service Management**		
4.1	Fundamental to Production Management	Lecture	2
4.2	Production Management Techniques	Lecture	2
4.3	Manufacturing Workshop	Workshop	1
4.4	Quality Management	Lecture	2
4.5	Quality Guarantee	Lecture and Practice	2
Suggested Course Content			
4	**Manufacturing and Service Management**		
4.1	Fundamental to Production Management	Lecture	3
4.2	Quality Management	Lecture	3

Table 4-31: Module 4, Manufacturing and Service Management

The suggested course has been cut some subject from this section and moves them to the second phrase regarding the specific requirement of participant. The production Management techniques is the good subject but not for all participant, it contains a lot of manufacturing knowledge, thus it would be better and give more profit to be held in the section phrase for the Manufacturing Business Group. The same went for Quality Guarantee subjects which the contents concerning most of the in line quality control system. Therefore the researcher decided to move the Production Management Techniques, Manufacturing Workshop and Quality Guarantee Subjects to the section phrase then in order to keep the good level of understanding in manufacturing knowledge to all the participant, the time schedule for Fundamental Manufacturing Knowledge and Quality Management subject will be 3 hours each.

Module 5: Organizational and Human Resource Management, and Knowledge of Business Laws

NEC Course Content			
5	**Organizational and Human Resource Management, and Knowledge of Business Laws**		
5.1	Business Ethics in Organizational and Human Resource Management	Lecture	2
5.2	Business Laws	Lecture	5
Suggested Course Content			
5	**Organizational and Human Resource Management, and Knowledge of Business Laws**		
5.1	Business Ethics in Organizational and Human Resource Management	Lecture	2
5.2	Legal Structure for New Business	Lecture	5

Table 4-32: Module 5, Organizational and Human Resource Management, and Knowledge of Business Laws

This is one of the important subject for New Entrepreneur, most of the participant came from new business owner (less than three years), fresh graduated or employee which has less knowledge in business laws. Thus this subject is very good indeed in the researcher opinions. There is one suggestion concerning the subject contents that might be better to focus more on the legal structure for new business creation.

Module 6: Financial Management

NEC Course Content			
6	**Financial Management the Analysis of Financial Figures.**		
6.1	Accounting Principle	Lecture	5
6.2	Accounting Workshop	Workshop	2
6.3	Cost Accounting	Lecture and Practice	2
6.4	Financial Analysis	Lecture and Practice	5
6.5	Financial workshop	Workshop	2
Suggested Course Content			
6	**Financial Management the Analysis of Financial Figures.**		
6.1	Accounting Principle	Lecture	5
6.2	Accounting Workshop	Workshop	3
6.3	Cost Accounting	Lecture and Practice	2
6.4	Financial Analysis	Lecture and Practice	5
6.5	Financial workshop	Workshop	3

Table 4-33: Module 6, Financial Management

Regarding to the questionnaire results, most of the participants were interested in the accounting and financial subjects, thus workshop time will be increased to three hours each.

Module 7: Business Plan Preparation

NEC Course Content			
7	**Preparation of Individual Investment Plans and Guidelines for Preparing the Business Creation or Expansion.**		
7.1	Individual Business Plan Preparation	Lecture	1
7.2	Business Creation or Expansion Preparation	Lecture	2
7.3	Marketing Plan	Lecture	1
7.4	Production and Organization Management Planning	Lecture	2
7.5	Finaical Plan	Lecture	5
7.6	Business Plan	Practice	2
Suggested Course Content			
7	**Preparation of Individual Investment Plans and Guidelines for Preparing the Business Creation or Expansion.**		
7.1	Individual Business plan preparation	Lecture and Practice	1
7.2	Business Creation or Expansion Preparation	Lecture	2
7.3	Business Feasibility Study	Lecture and Practice	2
7.4	Marketing plan	Lecture and Practice	2
7.5	Production and Organization Management Planning	Lecture and Practice	2
7.6	Finaical Plan	Lecture and Practice	5
7.7	Business Plan	Lecture and Practice	2

Table 4-34: Module 7, Business Plan Preparation

One more lecture and practice hour will be added into Marketing plan preparation section and the feasibility study subject would be required for two hours (lecture and practice) according to the new group work assignment that will be implemented in the first phrase.

Phrase II: Practical Course Contents

In second phrase, the NEC course contents will be focus more on the manufacturing and service management, telecommunication, energy resource opportunities and financial analysis as in the lists below,

NEC Course Content			
8	**Phrase II: Advance Business Management for SMEs Thai**		
8.1	How to Use the Suitable Energy Resources for SMEs to Reduce Costs and Protect the Environment.	Lecture	3
8.2	Recommended Business Opportunities, Small Energy in Thailand.	Lecture and Practice	3
8.3	Information and Communication Technologies for SMEs in Manufacturing Business	Lecture	3
8.4	Information and Communication Technologies for SMEs in Marketing Business	Lecture	3
8.5	Management of Manufacturing and Purchasing for SMEs	Lecture	3
8.6	Theory and Practice of Service Business Management.	Lecture and Practice	3
8.7	Financial Analysis for SMEs.	Lecture	3
8.8	Financial Analysis for SMEs and Advice on Financial and Business Plan for the NEC project	Practice and Workshop	9
9	**Phrase II: Free Election Subjects**		
9.1	Business Network Strategies and Business Negotiation	Lecture	4
9.2	Financial Investment	Practice	2
9.3	A Systematic Way to Create Business Ideas	Lecture	6
9.4	Business Project Management	Lecture	2
9.5	How to Prepare a Business Plan	Practice	4

Table 4-35: Phrase II, Practical Course Contents

And NEC also provides the free elective modules for the participants which they can choose whatever that would be beneficial to their business.

On the other hands, regarding to the questionnaire and the QFD results shown that the separated class room by business type would be more beneficial toward participant's objectives. Thus, the suggested course contents will be separated into one centre section and three specific sections (Manufacturing Industry, Service Industry and Trading Industry).

In the overall, the researcher would like to keep the core subjects in the main course structure so all participants will be learned.

Manufacturing Industry Section

Suggested Course Content			
8	**Phrase II: Manufacturing Industry Group**		
8.1	Production Management Techniques	Lecture and Practice	3
8.2	Manufacturing Workshop	Workshop	2
8.3	Quality Guarantee in Manufacturing Industry	Lecture and Practice	2
8.4	Information and Communication Technologies for SMEs in Manufacturing Business	Lecture	3
8.5	Management of Manufacturing and Purchasing for SMEs	Lecture	3

Table 4-36: Phrase II, Manufacturing Industry Section

According to module 4 that the production management techniques, Manufacturing workshop and quality guarantee will be moved to second phrase. Thus these three subjects will be in this section together with the Management of Manufacturing and Purchasing in SMEs and Information and Communication Technologies for SMEs in Manufacturing Business. Furthermore one more hours will be added to Manufacturing workshop.

Service Industry Section

Suggested Course Content			
9	**Phrase II: Service Industry Group**		
9.1	Theory and Practice of Service Business Management.	Lecture and Practice	5
9.2	Quality Management in Service Industry	Lecture and Practice	2
9.3	Information and Communication Technologies for SMEs in Service Business	Lecture	3
9.4	Health Care Business Opportunity in Thailand	Lecture	2

Table 4-37: Phrase II, Service Industry Section

Similar to the Manufacturing Section, the researcher will keep the core subject to be the advanced business management, quality and telecommunication for Service Business. And one more subject concerning “Thailand popular business trend in service business”, the Health Care Business Opportunity which most of the participant pay more attention during the interview period.

Trading Industry Section:

Suggested Course Content			
10	**Phrase II: Trading Industry Group**		
10.1	Theory and practice of Trading business management.	Lecture and Practice	5
10.2	Quality Management in Trading Industry	Lecture and Practice	2
10.3	Information and Communication Technologies for SMEs in Trading Business	Lecture	3
10.4	Stock Management in Trading Business	Lecture and Practice	2

Table 4-38: Phrase II, Trading Industry Section

For trading section, the Stock Management subject will be added regarding to the business characteristic.

Main Course Contents:

Suggested Course Content			
11	**Phrase II: Advance Business Management for SMEs Thai**		
11.1	Financial Analysis for SMEs	Lecture	3
11.2	Financial Analysisand Financial Statement Preparation for SMEs	Lecture and Practice	9
11.3	Financial Investment	Practice	2
11.4	Business Network Strategies and Negotiation Techniques	Lecture	4
11.5	Global Opportunity for SMEs	Lecture	2
11.6	A Systematic Way to Create Business Ideas	Lecture	6
11.7	Business Project Management	Lecture	2
11.8	How to Prepare a Business Plan	Practice	4
12	**Phrase II: Advance Topics for SMEs Thai**		
12.1	Advanced Topic I	Lecture	2
12.2	Advanced Topic II	Practice	4

Table 4-39: Phrase II, Main Course Section

Regarding to the variety of business level among the participants, some participants may have the opportunity to expand its market to the global level or export to the others country, thus the researcher would like to add one more subject concerning this issue “Global Opportunities for SMEs Thailand”. The idea to have one subjected regarding the energy resource opportunities in Thailand is indeed good but in

the year 2010, the participant that interest in energy business are quite less compared to the other subjects, in order to increase the feasibility of the course content, thus the Advanced Topic I (Lecture) and Advanced Topic II (Practice) will be added.

Others Section: Business Consulting, Business Observation and Business Plan Presentation

NEC Course Content			
10	**Business Consulting to Support the Business Creation or Expansion**	Activity	60
11	**Business Observation**	Activity	6
12	**Business Plan Presentation**	Presentation	12
Suggested Course Content			
13	**Business Consulting to Support the Business Creation or Expansion**	Activity	60
14	**Business Observation**	Activity	6
15	**Business Plan Presentation**	Presentation	12

Table 4-40: Business Consulting, Business Observation and Business Plan Presentation Section

Business Consulting: Most of the participants said that they need more consulting time but in the participative observation, the researcher concluded that the sixty hours consulting time is enough but the time arrangement might not efficient. Thus, in order to optimize the consultant performance and efficiency, the consulting time schedule must be held precisely and the consulting method should have a framework or the action plan concerning the participant's business with the subjects that they have learned in NEC project, the action plan follow up will be the issue in each consulting hours.

Business Observation: All participants didn't get benefit from the Manufacturing (Factory) observation, according to the separated class in second phrase thus the business observation will be separated regarding the business type, Manufacturing industry, Service Industry and Trading Industry. In which the participant's business background will be considered in the observation place selection.

Business Plan Presentation: The financial statement and bank loan process will be added regarding the participant requirement and the advisor agreement.

To sum up, the suggested course module was developed regarding the influence factors, improvement ideas, suggestions and the current NEC course module structure from Department of Industrial Promotion Center. NEC will arrange the more detail course structure and discuss with the expert from Industrial Promotion department in order to verify the suggested content. The collected comments from the expert will be used to make further improvement to the course.

4.7 Recommendation from the Experts

Regarding to the ISD concept in literature review, the instructional design process must be consisted of four main phases, Analysis, Design, Development and Implementation, however in this thesis, the scope does not cover the implementation period which required so much time in order to implement the new course structure (Next year NEC program). Therefore, the course module evaluation and verification by experts will be used in order to guarantee the new course module performance.

Expert comments: The recommendations from the research are useful for the upcoming NEC projects in the following aspects.

- The results from close-ended questionnaire which are processed by the statistic methods seem properly made richer be corresponding open-ended questions which were also analyzed qualitatively. The presence of the researcher as participating observer for several months also provides the insight into the situation interested. Therefore, this research project is done both subjectively and objectively.

- It has methodological robustness by analyzing the difference of opinion and attitude between those participants who deemed successful and the otherwise ones. We can see which elements of the NEC project have significant impact in the participant learning experience and outcome.

- It is agreeable that classroom courses about financial management play important roles in educating since they are not only ones of the most technically challenged but also have disproportionately allocated.

- Group works and shop exhibitions may be considered less relevant to the success. The major reasons for that are probably the diversity of businesses and nature of each participant. More scrutiny and rigorous planning on those activities are needed.

- The utilization of QFD diagram in the analysis of the questionnaire seems reasonable. It is quite reasonable that the participants need more time in the project; particularly the time for more personal contacts which is closely related to their current business interests. Therefore, the content of the project which tries to create entrepreneurial learning regardless of their specialization should be reduced and increase more specific training contents.

- The separation of the industry in advanced learning phrase into 3 groups is interesting and possible but has to take the multidisciplinary nature of entrepreneurship into consideration as well.

- The categorization of business type seems to be more useful and possible in practice because the participants who have never had

business before are innately different from newly-established business owners.

- The recommended group works and any supporting activities can be truly useful if they are made more compulsory and showing promising potentials of enhancing the participant business than just as ice-breaking or social activities.

- The strategic partnership between previous NEC cohorts and new participant in knowledge sharing and networking is wise but creating such motivations for joining may need careful planning; how much of volunteering and how much of proper hiring.

In conclusion, the overall course module seems to be more useful and possible in practice, and will be listed as the suggested course module for the next year program in the discussion meeting between NEC project team (IMTCU) and the Department of Industrial Promotion Center.

4.8 Standard Instructional Design Process for NEC Program

According to the continuous change in the course module in each educational year which came from the dynamic atmosphere and input, with the purpose of increase the performance of NEC program only the new course module design and development might not enough. The NEC standard instructional design process must be developed in order to standardize the course module design process and strengthen the NEC program performance continuously.

With the department of Industrial Promotion Center that have policy to accept all kind of participant that have possibility to create the new business or expand the existing business, these will make the dynamic input into the process which will make the change or fluctuate performance in each year program. Thus the standard instructional design process must be clarify in order to respond the dynamic input and

business atmosphere that keep changing according to the Thailand market trend and global situation.

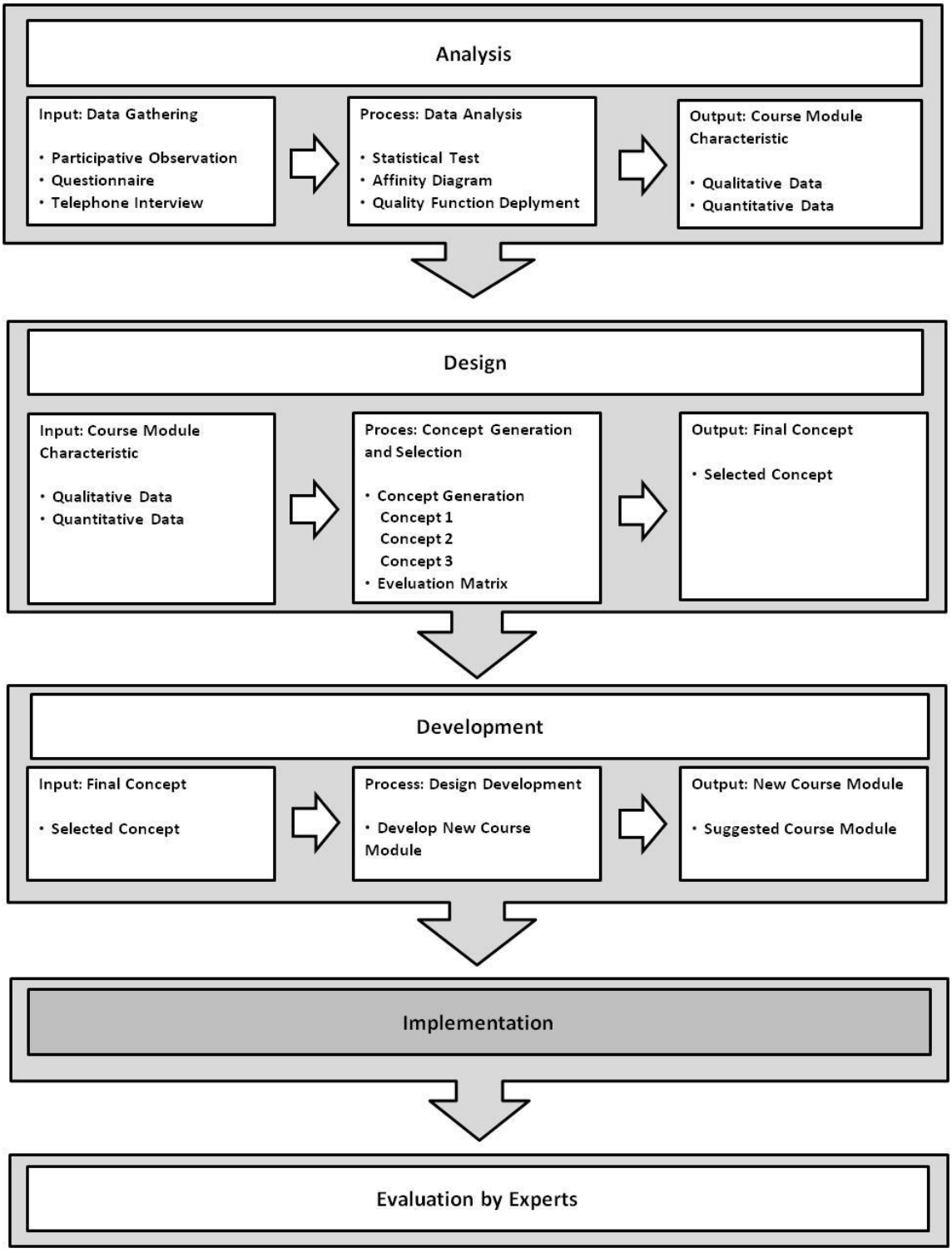

Figure 4-16: The Standard Instructional Design Process

4.9 Conclusion

In order to increase the performance of NEC program, only the instructional design process might not enough. The standard instructional design process will be used to analyze the influence factors, and then develop the course module regarding the analysis results, but there also required operation management system to control and standardize the whole process.

CHAPTER V

CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The process design for New Entrepreneur Creation program is initiated from the unclear problem in NEC program performance measurement due to the current process that the result of NEC project have been measured by the indicator in number of successful business plan and participants, however with the dynamic business environment and input (participants) of NEC, it is not enough to verify the result of the project. Furthermore, in order to develop the effective key performance indicator, the process must be stabilized.

Thus with the dynamic input, atmosphere and market trend in SMEs Thailand, resulting in the change in course structure every educational year but there is no guarantee for the result of the program. There still lack of information concerning the research of significant information and method which the new entrepreneurs need in order to success in creating or expanding their SME business. Therefore the first most important problem at NEC now is the effective NEC process to ensure the customer satisfaction.

The process design can be separate as five process steps as Process study and information gathering, Analysis and interpretation of data, Concept generation and selection, Design development and Result evaluation.

Process study and information gathering

After the NEC program finished, 84 participants who are 29 successful participants and 55 unsuccessful participants, taking the completed modules were surveyed by questionnaires during their first business result tracking to evaluate their satisfaction extent and to investigate their cognitive changes induced by the current course modules by applying qualitative research methodology. Data sources include

classroom activities (Group work), teaching and discussion, business plan reports and their execution, participative observations and interviews with entrepreneurs, and outside-classroom experience (Business Observation).

Analysis and interpretation of data

After analyze on the process flow and information, the identification that need to focus can be separate into three main sections as knowledge, attitude and activities. These sections will be analyzed regarding the NEC performance. The analysis process can be divided into two parts as quantitative and qualitative analysis.

Quantitative: The quantitative part was analyzed with the close ended questionnaires. At first the statistic test to determine the participant's information to see the relationship between the participant that create new business or extend the existing business with participant that did not create or expand the business. The participant' information that used in this statistic test are sex, status, educational, type of business, no. of hours attending class and business plan result.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Sex	0.062[a]	0.004	-0.008	0.48029
Status	0.085[a]	0.007	-0.005	0.47946
Education	0.155[a]	0.024	0.012	0.47536
Type of Business	0.101[a]	0.01	-0.002	0.47875
No. of Hours Atending Class	0.095[a]	0.009	-0.003	0.47905
Business Plan Result	0.108[a]	0.012	0.000	0.47842

Table 5-1: Quantitative Result I

There are no significant relationships concerning participant's information between the participant that create new business or extend the existing business with participant that did not create or expand the business.

Then the knowledge, attitude and activities sections that being held in the current course structure were analyzed using the hypothesis test.

		t	Sig. (2-Tailed)	Relatioship
Basic Knowledge	General Business Management	1.184	0.240	No
	Marketing and Sale	0.754	0.453	No
	Manufacturing and Service Management	0.538	0.592	No
	Financial Management	2.481	0.016	Yes
Attitude	Confident	2.989	0.004	Yes
	Risk Tolerant	2.082	0.040	Yes
	Self Employed and Independent□	1.452	0.150	No
Activities	Business Observation	2.403	0.019	Yes
	Shop Exibition	-0.833	0.407	No
	Group Work	1.024	0.309	No
	Individual Consulting	3.153	0.020	Yes

*P-value >0.05

Table 5-2: Quantitative Result II

The results of this part are in accord with the viewpoint of Berman & Ritchie (2006) and Levenburg, Lane & Schwarz (2006); through integrated entrepreneurship education activities, not only the technicality of professional skills is represented, but also the need of entrepreneurial attitude is included in the entrepreneurial training.

As a whole, the research findings revealed the existence of significant differences between the participants that create or expand the business and the participants that did not create or expand the business towards some aspects concerning the entrepreneurship field such general knowledge, attitude and activities. Meanwhile, results from t-test indicate that the satisfaction toward attitude and activities are more positive than knowledge concerning the items related to these three aspects mentioned above. This is shown through the higher mean score value by attitude and activities compared to general knowledge.

Concept Generation and Selection, and Design development

This thesis has developed 15 course modules and the results shows that these course modules are conducive to participant's learning of professional skills, knowledge of case study, workshop and practical assignment toward the specific business classes. Furthermore in the phrase I, the course modules will focus on the basic knowledge and awareness of the business creation and expansion together with the practical group work activities and business network build-up. Specifically, this curriculum can provide participants with an opportunity to systematically "learn by doing, do while learning". This will motivate their learning, give confidence in learning again and thus improve educational quality with real benefit toward NEC program. Brown (1983) has found that enhancing the post-cognitive abilities of participants by appropriate training can improve their problem-solving abilities. Duncan (1996) also posited that apprenticeship is an effective learning mechanism, and that systematic plans for entrepreneurship education will improve participants' professional socialization.

Evaluation and Verification

In the evaluation and verification of the course structure, the direction is focused on participants' cognition and entrepreneur skill after learning these modules; based on the assumption that the experience and belief constructs which participants gain from their instructors as the participants become more experienced, pass through two phases learning in the concept of externally supported and transitional. Hence, this course structure will provided the participants' cognitive changes and entrepreneur skill in these two stages which can be briefly described as follows:

- **Externally supported stage:** this reflection at different levels, from routine, technical, practical to critical level toward professional socialization during practical training and assignment

- **Transitional stage:** this indicates on which the practical knowledge transitions from abstract form to concrete form and includes the knowledge transformed into actual behavior in entrepreneur activities, of individual characteristics and in environment-specific action.

The Standard Instructional Process Design

The standard instructional design process must be developed and follow up in order to guarantee the effective course module and NEC program performance. With the purpose of NEC program performance development, the continuous improvement concept together with standard instructional design process must be implemented to measure against the dynamic change in both input (participants) and business environments.

In conclusion, with the purpose of the practice quality-oriented course module development and standard instructional design process for NEC program training, the study has illustrated how QFD, incorporated with MBO and instructional design process, can be used to improve all levels of training activity, from program design, to curriculum, to specific course.

This study has been provided the greater understanding about the participant performance requirements of the NEC course structure as well as the learning needs of the new entrepreneurs. The understanding about customers is important for the design and plan for appropriate course modules.

5.2 Further Studies

Future plans include the participants, new entrepreneurs, themselves to do the QFD and make improvement suggestions to the instructor or project leader, which are carried out the following training year by a new project team.

5.2.1 Dynamic Development of Course Modules

Collaborative action development methods must be implemented, and practically experienced and interested instructors from selected institutions, community entrepreneurs. Regarding to the standard instructional process design, the NEC program need to form the project team and develop course modules and a syllabus through theoretical investigation (questionnaire, interview and QFD) and joint discussion. The team then carried out collaborative training and evaluated the participants' performance with the modules in order to examine and improve the course structure. Records of the project team meetings, regular discussions with the entrepreneur, instructors and mentors, and other documents generated in the course modules, so as to perfect the planning and implementation of the course structure.

5.2.2 Potential Participant Qualification Requirement

With the policy of the department of Industrial Promotion Center to accept all kind of participant that have possibility to create the new business or expand the existing business, these will make the dynamic input into the process which will make the change or fluctuate performance in each year program. From the information concerning participant qualification of NEC at IMTCU 2010 and all Thailand NEC 2010, there are some significant issues.

Participant Status before Training NEC Program: the Business Heir and Employee have the highest possibility to become the new entrepreneur.

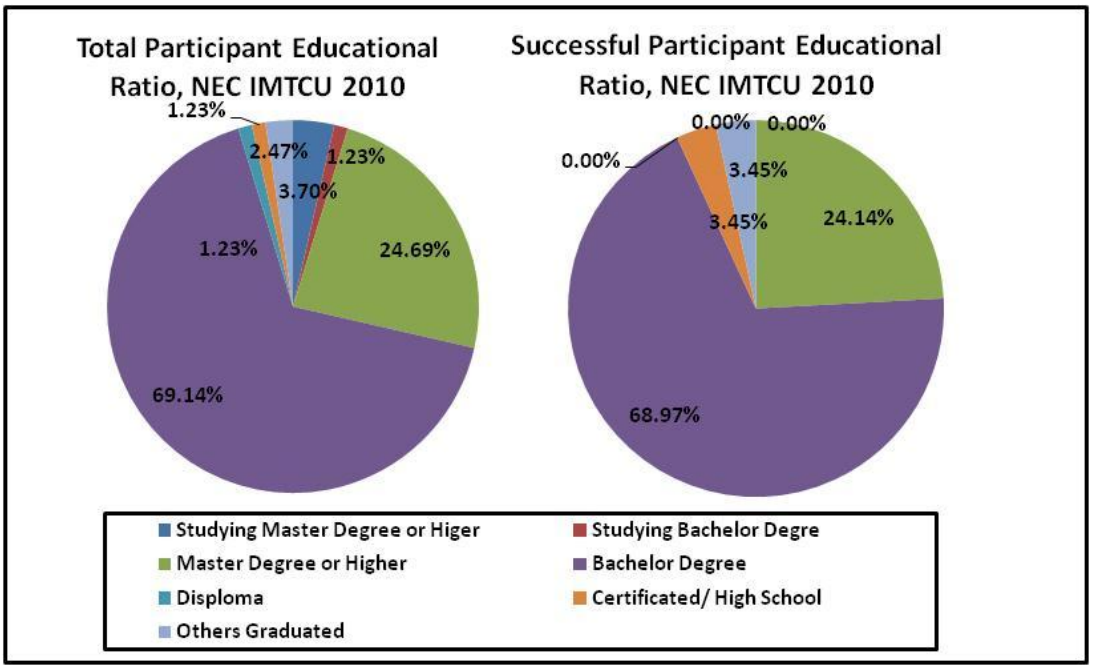

Figure 5-1: Educational Background Comparison Chart at NEC IMTCU, 2010

Participant Educational Background: the Bachelor degree and Master degree have the highest possibility to become the new entrepreneur

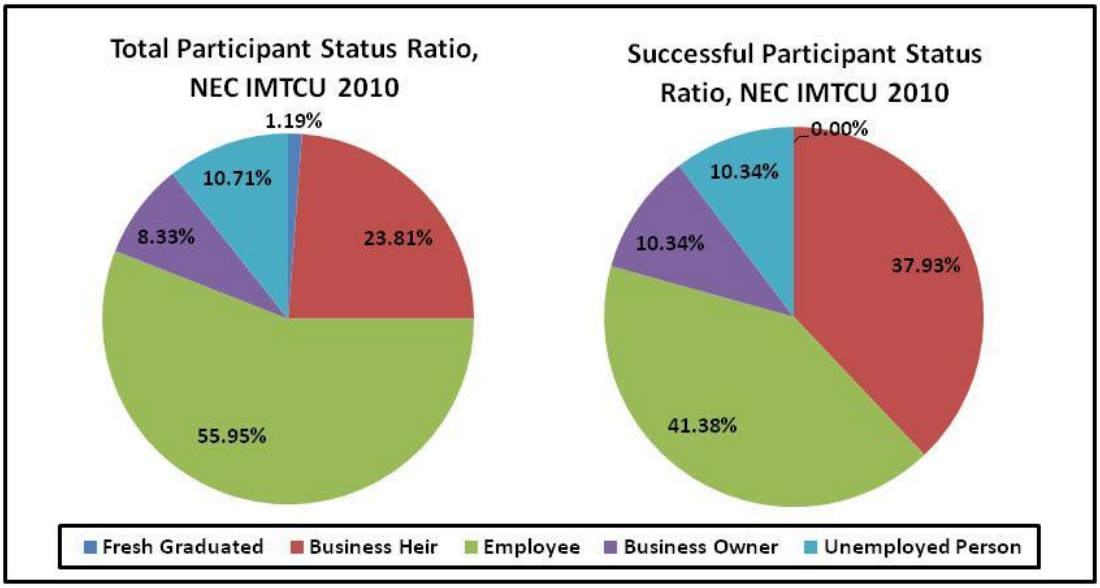

Figure 5-2: Participant's Status before Training NEC Program Comparison Chart at NEC IMTCU, 2010

Regarding the data from the Department of Industrial Promotion Center, it shown that there are proportionally in each educational background, and status before training NEC program,

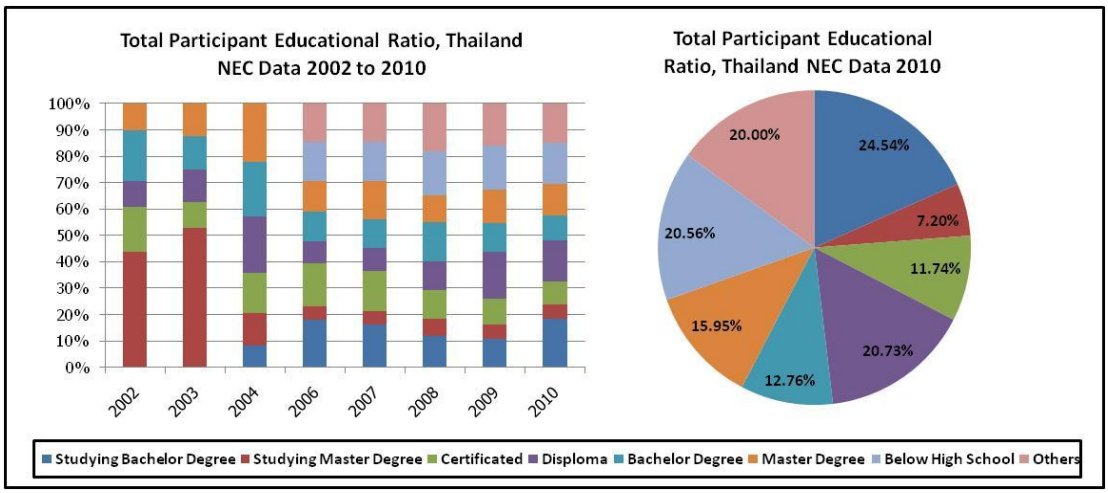

Figure 5-3: Participant's Educational Background Comparison Chart of Thailand NEC Program, 2002 to 2010

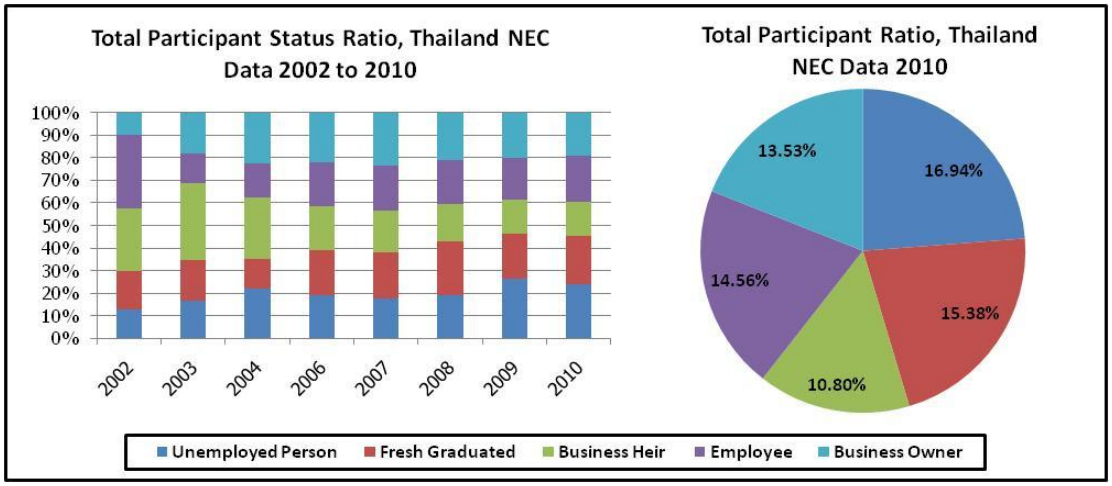

Figure 5-4: Participant's Status before Training NEC Program Comparison Chart of Thailand NEC Program, 2002 to 2010

The ratio of participant qualification must be clarified in order to improve the NEC program performance, for example, the data from all Thailand NEC program in year 2010 shown that there are proportional ratio in both educational background and status before training NEC program, on the other hand the data from NEC at IMTCU in

year 2010 shown that in educational background, the Bachelor degree and Master degree have more possibility to become new entrepreneur than the others, and in participant status before training NEC, the Business Heir and Employee group also have more possibility.

With the current result measurement, NEC program at IMTCU have produced more successful participants than the NEC program at the other units. In comparison with the others NEC program in Thailand, NEC program at IMTCU limited and specified the participant qualification, they aimed at Business Heir and Employee with the educational background in Bachelor degree and Master degree as their first priority.

In conclusion, with the purpose of continuous improvement even though the standard instructional design process was implementing, the further studies should be focus on two main dynamic factors, input ratio in term of participant qualification and the forecast of business environment.

REFERENCES

New Entrepreneurs Creation (NEC) by Research Unit for Industrial Management and Technology [Online]. Available from: www.imtcu.com, [2010, June]

New Entrepreneurs Creation (NEC) by Department of Industrial Promotion Center [Online]. Available from: http://nec.dip.go.th/, [2010, June]

A. Mital, A. Desai, A. Subramanian and A. Mital, Product Development a Structured Approach to Consumer Product development, Design, and Manufacture, Butterworth-Heinemann, 2007.

Alain Fayolle, Entrepreneurship Education in Europe: Trends and Challenges, EM Lyon Business, 2009.

Berman, J. & Ritchie, L. Competencies of undergraduate business students. Journal of Educatiojna for Business, 81(4),205-209, 2006.

Blenker P, Dreisler P, Kjeldsen J. Entrepreneurship Education – the New Challenge Facing the Universities – A Framework for Understanding and Development of Entrepreneurial University Communities (Working Paper). Aarhus School of Business. Aarhus, Denmark, 2006.

Blenker P, Dreisler P, Færgemann HM, Kjeldsen J. Learning and teaching entrepreneurship: Dilemmas, reflections and strategies. In Fayolle &

Klandt (eds.) International Entrepreneurship Education: Issues and Newness, Cheltenham, UK, Edward Elgar, 2006.

Cohen, L. Quality Function Deployment: How to make QFD work for You, Massachusetts: Addison-Wesley Publishing, 1995.

David Parmenter (2007), Key performance indicators: developing, implementing, and using winning KPIs, John Wiley and Sons, 2007

Garavan TN, O'Cinneide B. Entrepreneurship Education and Training Programmes: A Review and Evaluation – Part 1, J. Euro. Indust. Train. 18, 8(1994): 3–12.

Gibb A, Creating conducive environments for learning and entrepreneurship. Living with, dealing with, creating and enjoying uncertainty and complexity. The First Conference of the Entrepreneurship Forum Entrepreneurship and Learning. Naples June, 2001.

Gibb A, In pursuit of a new 'enterprise' and 'entrepreneurship' paradigm for learning. The International Journal of Management Reviews, Autumn, 2002.

Gibb A, The enterprise culture and education. Understanding enterprise education and its links with small business, entrepreneurship and wider educational goals. International Small Business Journal 11/3, s. (1993): 11–24.

Glushkovsky, Eli A., Radu A. Florescu, A. Hershkovits, and D. Sipper. Avoid a Flop: Use QFD with Questionnaires, American Society for Quality. Quality Progress,

28, 6(1995): 57-62 [Online]. Available from: http://www.asq.org/, [2010, June]

John J. Cristiano, J. K. Liker and C. C. White, Customer-driven product development throught quality function deployment in the U.S. And Japan, the Journal of Product Innovation Management 17 (2000): 286-308.

Kolb DA Experiential Learning. New York: Prentice Hall, 1984.

Levenburg, N. M. Lane, P. M. & Schwarz, T. V. Interdisciplinary Dimensions in Entrepreneurship. Journal of Education for Business. 81(5), 275-281, 2006.

Merrill, D., First Principles of Instruction, ETR&D, 50, 3, 2002: 43-59 [Online]. Available from: http://cito.byuh.edu/merrill/text/ papers/5FirstPrinciples.PDF, [2010, June]

Peter Van Der Sijde, Annemarie Ridder, Gerben Blaauw and Christoph Diensberg, Teaching Entrepreneurship: Cases for Education and Training, Physica-Verlag Heidelberg, 2008.

Shane S. A General Theory of Entrepreneurship. The Individual-opportunity nexus. Cheltenham, UK, 2003.

U.S. Army Field Artillery School. A System Approach To Training (Course Student textbook). ST - 5K061FD92, 1984.

Appendix

Questionnaire

The Satisfaction or Importance of the Course Modules and Activities

No.	Subjects and activities	Satisfaction or Importance				
		1	2	3	4	5
1	General Business Management					
2	Marketing and Sale Management					
3	Manufacturing and Service Management					
4	Financial Management					
5	Confident					
6	Risk Tolerant					
7	Self Employed and Independent					
8	Business Observation					
9	Shop Exhibition					
10	Group Work					
11	Individual Consulting					

NEC Project Improvement Ideas or Comments

1……

2……

3……..

* Importance of course modules and activities

e.g. 1 = not important

2 = slightly important

3 = moderately important

4 = very important

5 = most important

BIOGRAPHY

Teerasak Korkiatiwanich was born in Chonburi, Thailand 1984. He graduated from Thammasat English Program of Engineering, Thammasat University, Thailand in 2006 with a Bachelor's degree in Industrial Engineering. He continues to study in Engineering Business Management for Master's degree at Regional Centre for Manufacturing Systems Engineering, Chulalongkorn University (Thailand) and University of Warwick (United Kingdom). He had been working as Industrial Engineering at Michelin Company during his Master's degree.