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Contents

Editorial

Human Resource Development has played important role in developing societies and countries. Human resource is the valuable assess of the country, the more human resource is developed the better the wealth of the country is. Human resource is the only resource that when developed will not harm natural resources like other kind of development. In most countries human resource development was aimed to develop their economy, making them more competitiveness over competitors. It is seen as one of the factors of the economic success, this was the original concept. However the society and the country development involve more than the economy. The wellbeing of the society of the country and of the world should be the ultimate goal of the development. The current economic development of most countries involved industrial development that is directly harmful to the wellbeing of our world, specifically producing the harmful waste and pollution. It is evident that the developed economy countries produce more waste and pollution. This fact has been recognized by those developed and developing countries and there is an effort to solve this problem but, sadly, the main economic leader- the America has shown the intention to ignore the problem citing the interest of the American should come first. Ironically, the developing countries and UNESCO have recognized the urgent need to solve the problem. UNESCO has proposed the sustainable development, while Thailand led by the late King Bhumibol had proposed the Sufficiency Economy, the stepping stone for the new paradigm of the development. Human resource development professional should have recognized this fact and alter any possible effort to ensure the wellbeing of the society and the nation. This expectation is still not shown in the articles published in the HRD journal. We are expecting that there will be more interest and concern of protecting our environment from the research article in this journal. Everything is connected and affected other, event HRD profession should have the duty to help safe the world.

Editor in Chief

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Graduates' Performance of Business Administration Program at the National University of Laos

- **Saykham Phongsavath**
- **Chalong Tubsree**
- **Saratid Sakulkoo**

Abstract: *The main purpose of this case study was to investigate the performance of graduates earning a BBA based on human capital principles. The informants of the study were graduates of the BBA program at the National University of Laos from 2007 to 2014. They were from three groups, which were the self-employed, management and operation groups. Twenty-eight informants from organizations, public companies and the private sectors were selected. The data were collected with in-depth and semi-structure interviews, and analyzed based on manual coding.*

The findings:

Three groups of BBA graduates have reported on performance that they still kept learning after gaining direct knowledge from the BBA program as applied to work. They gave priority to product quality and honesty to customers. All groups valued and recognized the importance of internal unity, teamwork, English and focusing on IT, specifically the use of social networks.

Each group differed in several aspects. The self-employed group ran businesses using a family management style but discipline was the core of work. After graduating, they developed new management systems and the knowledge most required was human resource management, marketing, and ethics. The management group was working in higher positions and proud of their achievements. The performances required were leadership and human resource management. The operation group gained experience and chances to meet many people from work, which made them patient. They learned to work under pressure and handle heavy workloads. The problems at work were English and IT skills.

Keywords: Graduates' Performance of Business Administration Program, National University of Laos, Human Capital, Human Resource Development, Attitude, Achievement.

Introduction

All countries normally compete in human resource development and Management. Human capital is the most important resource providing maximum outcome for the advancement of a country. Development of the economy, society and environment always depend on human resource to create human capital.

From the environment, Social-Economic quickly changed, and the world advanced management services that emphasized knowledge; so persons are the main factors pushing the organization to reach the goals. If the organization aims to encourage each person to use skills, knowledge and ability for high advantage, the organization should understand that the

behavior of human resources has differences with other resources. Persons are properties that cannot be touched or absorbed as property. Persons are "Human Capital" which can make "value added" and the Human Capital means Knowledge, Skills, and Ability (KSAs) including the experiences of each person, combined with those to improve the efficiency of the organization or to be the main resources. In addition, more values will make the organization have more ability and advantages than their competitors will.

The National University of Laos (NUOL) is the main Institute to respond to human resources development for society and for country. Therefore, the NUOL development should guarantee two types: the forward of academics type and the qualification type. NUOL development should have forward of academics, firstly, the largely developed syllabus of teaching and learning, and focusing on quantity and quality. The quality of NUOL students, who graduated, should have the special academic knowledge of a foreign language that responds to the need of social economic development. For this successful work, the committees should inspect and reform the process of learning and teaching, because this process is the principal of educational quality. Therefore, enlargement and development on the process of learning and teaching should be the educational quality that could merge regional education and international for the AEC in the end of 2016 (Viphavanth, 2015, p.1).

The main human resource development (HRD) activities are training and education provisions. Higher education institutes play an important role in achieving this goal. Since education is one of the major activities of personal development (Joungtrakul, 2010), the development of higher education institutes and universities affects immensely on national development, because its product is individual development that responds to the labor market and national economic growth. This also is consistent with the philosophy of HRD, as the primary purpose of HRD is the development of the individual, and the primary outcome of HRD is learning and development (Swanson & Holton III, 2009).

Purpose of Study

The main purpose of the study was to investigate the performance of the graduates earning a Bachelor of Business Administration from the National University of Laos from 2007 to 2014 based on the human capital principles.

Research Questions

The central research question for this study is ***"Which jobs lead to successful careers for graduates of the Business Administration Program at the National University of Laos?"*** However, the researcher has set four specific questions as follows:

1. What was the performance of BBA graduates who were self-employed?
2. What was the performance of BBA graduates who were in management?
3. What was the performance of BBA graduates who were working in operations?
4. What was the perspective of BBA graduates toward the Faculty of Economics and Business Management, National University of Laos?

Literature Review

The researcher has provided some of literature reviews to support the study framework as follows.

Performance Management Concept

Management applies to small and large organizations, profit and not-for-profit enterprises, and manufacturing as well as service industries. However, a given situation may differ considerably among various levels in an organization or various types of enterprises. Performance management maintains, develops and motivates the people at work to give better results. Performance management can focus on performance of the organization, a department, processes to build a product or service, employees, etc. Aguinis (2009, p. 2) defined "performance management" as a continuous process of identifying, measuring, and developing the performance of individuals and teams and aligning their performance with the strategic goals of the organization. Performance management is a useful tool for increasing labor yield, individual performance and reducing general administration costs. According to Armstrong (2006a), performance management can be defined as a systematic process for improving organizational performance by developing the performance of individual and teams. Overall, performance management aims to: (1)Empower, motivate and reward employees to do their best, (2) Focus employees' tasks on the right things and doing them right; align everyone's individual goals to the goals of the organization, (3) Proactively manage and resource performance against agreed accountabilities and objectives, (4) Align individual objectives with team, department and corporate plan, (5) Make individuals clear about what they need to achieve and the expected standards, and how that contributes to overall success of the organization, (6) Provide regular, fair, accurate feedback and coaching to stretch and motivate employees to achieve their best, (7) Maximize the potential of individuals and teams to benefit themselves and organizations. Protopopescu (2013) mentioned that performance based management can be regarded as a proactive system of managing employee performance for driving the individuals and the organizations towards the desired performance and results. It could be concluded that the important components of performance management are attitude, motivation, job satisfaction, and training and development activities.

Human Capital Concept

Dess, Lumpkin & Eisner (2010b, p. 122) human capital is the "*individual* capabilities, knowledge, skills, and experience of the company's employees and managers". This knowledge is relevant to the task at hand, as well as the capacity to add to this reservoir of knowledge, skills, and experience through learning. Cannon-Cannon-Bowers & Salas,(2014). Knowledge, skills and attitudes (KSAs) are critical to successful job performance. Knowledge refers to the necessary understanding of facts, concepts, relations and underlining foundation of information a trainee needs to perform a task. Skills are those behavioral and cognitive sequences and procedures necessary for task performance and Attitude refers to the necessary affective components of the task. Armstrong, M. (2005, P7) it also means engaging in talent management-the process of acquiring and nurturing talent, wherever it is and wherever it is needed, by using a number of interdependent HRM policies and practices in the fields of resourcing, learning and development, performance management and succession planning. Kwon, Dae-Bong. (2009, p. 4) considering that experience can be included as a category of knowledge, the human capital is a synonym of knowledge embedded in individuals.

Human Capital: The Foundation of intellectual Capital.

Dess, Lumpkin, Eisner. (2010b, p. 123) organizations must recruit talented people-employees at all levels with the proper sets of skills and capabilities coupled with the right values and attitudes. Such skills and attitudes must be continually developed, strengthened, and reinforced, and each employee must be motivated and her efforts focused on the organization's goals and objectives.

The rise to prominence of knowledge workers as a vital source of competitive advantage is changing the balance of power in today's organization. Knowledge workers place professional development and personal enrichment (financial and otherwise) above company loyalty. Attracting, recruiting, and hiring the "best and the brightest," is a critical first step in the process of building intellectual capital.

Hiring is only the first of three processes in which all successful organizations must engage to build and leverage their human capital. Firms must also *develop* employees to fulfill their full potential to maximize their joint contributions. Finally, the first two processes are for naught if firms can't provide the working environment and intrinsic and extrinsic rewards to *retain* their best and brightest.

The Concept of Human Capital

Human capital can be considered at two levels. At the macro level it is regards as "a key factor of production in the economy wide production function" (Son, 2010, p. 2). At the micro level it is considered "the component of education that contributes to an individual's productivity and earnings while being an important component of firm production" (Son, 2010, p. 2). Thus human capital can be referred to "the ability and efficiency of people to transform raw materials and capital into goods and services, and the consensus is that these skills can be learned through the education system (Son, 2010, p. 2). According to Davenport (1999) it comprises: (1) ability which include knowledge, skills and talent; (2) behavior which is observable ways of acting that contribute to the accomplishment of work; (3) effort which is the conscious application of mental and physical resources toward a particular end; and (4) time which is referred to the chronological element of human capital investment. It can be seen as other perspectives of human resource development that focus on the measurement of the investment in human resource development.

Research Design

The research design for this study is a qualitative study using a case study as research strategy. The researcher conducted the qualitative method research based on the results of the prior pilot study.

Data Collection

The researcher has collected the data by using in-depth and semi-structured interview, interviewing 28 participants who were former graduates from the BBA program (Bachelor of Business Administration) at the National University of Laos.

Table 4.1 Demographics of the Participants

No.	Gender	Age	Education Degree	Marital Status	Job Position	Experience (Years)
1	Male	51	Bachelor	Married	President	32
2	Male	40	Master	Married	Deputy Director	24
3	Female	26	Bachelor	Married	Accounting	6
4	Male	27	Bachelor	Single	Cashier	4
5	Male	26	Bachelor	Single	HR Officer	5
6	Female	26	Bachelor	Single	Sales Representative	4
7	Male	25	Bachelor	Married	Director	3
8	Female	45	Master	Married	Director	23
9	Female	27	Bachelor	Single	Credit Control	4
10	Male	26	Bachelor	Single	Cashier	5
11	Male	53	Bachelor	Married	Manager	25
12	Male	29	Bachelor	Married	Deputy Director	6
13	Male	49	Master	Married	Deputy Chief	23
14	Male	30	Bachelor	Married	Jewelry Shop Owner	17
15	Female	26	Bachelor	Single	Purchasing	2
16	Female	39	Bachelor	Married	Manager	16
17	Female	26	Bachelor	Married	Finance	4
18	Female	35	Bachelor	Married	Secretary	8
19	Male	34	Bachelor	Single	Debt Claim	12
20	Female	42	Bachelor	Married	Head of Unit	19
21	Male	28	Bachelor	Single	Head of Department	4
22	Male	48	Bachelor	Married	Manager	48
23	Male	27	Bachelor	Single	Floating Restaurant Owner	4
24	Male	42	Bachelor	Married	Director	18
25	Male	41	Bachelor	Married	Deputy Chief	20
26	Male	48	Master	Married	Deputy of Department	26
27	Male	36	Bachelor	Married	Head of Unit	11
28	Male	27	Bachelor	Married	Deputy Director	4

Data Analysis

The qualitative data analysis employed in this study started with the coding the coding was done manually since the data were a small scale according to Saldana (2009) The coding was done in three cycle, first cycle coding, second cycle coding and third cycle coding. The first cycle coding method was used to extract the data from the interview transcripts, the coding and formatting made it more convenient and easier to revise. A number was assigned for each line to allow a preliminary analysis of the data. The researcher used a pencil portrait of Initial Coding, devised by Charmaz (2006), then the researcher has read and re-read the raw

data. Next, the researcher began to categorize in the second cycle coding analysis, which are now presented in more detail. For the second cycle coding method the researcher began with manual coding line by line. Then, classified and grouped the open codes. In order to clarify the second round coding correctly the researcher consulted a qualitative research expert on this matter. The third cycle coding method helped categorizing categories, and then the researcher displayed and made reduction again. Finally, after withdrawing and making a conclusion as Miles and Huberman (1994) suggested there were only eight main categories as: (1) Prosperity in life after Graduating with a BBA, (2) BBA as a Foundation Work in Progress, (3) Working Process Development, (4) Attitude Development, (5) Motivation, (6) Human Capital in the BBA field, (7) Looking back at the Business Administration Program and (8) Preparation for AEC.

Trustworthiness

In order to establish academic rigor, the reliability of the data (Dependability), the interview guide was first reviewed by my advisor and co advisor to verify the accuracy of the desired objectives. Second, it was validated and reviewed by examination committee. In addition, a pilot study was conducted to determine whether the questions were valid, understandable and answerable. All suggested alterations and changes were made, and the final guide was used in all the interviews.

Ethical Considerations

Prior to conducting the interviews, a formal application was submitted, and approved by ethic research committee, for maintaining privacy and the protection of research data. This study was based on voluntary participation among the target population, but they were encouraged to take part in the study by explaining to them the benefits of the study.

Discussion

Response to research question one

1. What was the performance of BBA graduates who were self-employed?

In responding to this research question, the performance of the graduates was integrated to answer the question. The findings for the self-employed participants in Laos are as below:

Self-employment is most frequently identified with someone running a business. The respondents represented mainly such sectors as agriculture, microfinance, international school, import-export, jewelry, restaurant, labor supply and construction. Most of the former students who were self-employed persons had similar comments on several topics. The respondents claimed that they entered into cooperation with a particular enterprise because of business ideas and visions including business expansions and business developments from the BBA program. They applied and integrated their knowledge from theories and practical experiences. Overall their businesses grew very well. The important and necessary knowledge that they usually used was Human Resource Management, Marketing, Business Ethics, Psychology, English speaking skills, Accounting and Finance. Moreover, human relationships and work discipline are major topics that needed for work. This is because most of entrepreneurs have the concept that “Discipline is the Core of Work”. Team work is supposed to encourage a friendly atmosphere where members are motivated to make an extra effort and support each other which leads to happiness, capacity building, internal

unity and helping each other when someone has a problem or is sick. Some participants were also influenced by demotivating factors, which reduced their relative participation and commitment. In the long-term, this situation may affect work motivation, satisfaction and lead to decreased personal work performance. When many people work together, the output is team perfection, which increases the potentiality and productivity of the organization (Limkriengkrai, 2011).

Most of them have pride in their business achievements. The self-employed most often emphasized the internal unity of the organization that creates a good working atmosphere and environment for employees that is like family. Most were family businesses. Furthermore, entrepreneurs gave precedence to customers, for example "The customer is God." The self-employed respondents were predominantly of the opinion that service must be honest, fair, and trustworthy to customers and society.

Two of them had struggled with their businesses before be successful. After graduation, they expanded and developed new management systems. The other four participants built up new businesses after they graduated with a BBA. They were confident in their ability plus their capital funding. The other two participants had had sales experience since they were young and were studying. These participants are important for society and the nation. They are part of the national economic development and build the reputation of the country.

This is also confirmed by the study of Chlosta, S. et al. (2012). Growing up in an entrepreneurial family offers the opportunity to learn from the self-employed parent serving as a role model and getting a realistic job preview of self-employment. Their research shows not only that the presence of a parental role model increases the likelihood that individuals become self-employed but that the influence of role models also depends on the individual's openness. Moreover, many researchers have found that early exposure to parental role models in the family business will affect the children's attitude towards becoming self-employed themselves (Carr and Sequeira 2007) and that growing up in a family with self-employed family members may lead to a general business attitude of the children (Dunn and Holtz-Eakin 2000). Finally, graduates who came from entrepreneurial families can benefit in accessing the family business.

These self-employed Lao BBA graduates have similar guidelines to Ukrainians. In the Ukraine, the government supports youth enterprises in order to encourage students to accumulate and leverage entrepreneurial skills and knowledge to increase self-employment and new venture creations (Solesvik, et al, 2012). Many young people face the following barriers to self-employment and business creation: poor self-confidence, experience and knowledge deficiencies relating to entrepreneurial behavior, and finance shortages. Laos' robust economic growth is a result of its exposure to global markets, AEC members and increased foreign investments. Since the major economic reforms, the economy of Lao PDR has expanded remarkably. The wealthiest provinces of Vientiane and Vientiane province are larger than the poorest provinces of Huanphanh, Luangnamtha, and Phongsaly in the northern region. Laos' government supports graduates to be business owners but this policy still in a tiny group.

Response to research question two

2. What was the performance of BBA graduates who were in management?

The findings for the management group in organizations and companies in Vientiane from the participants are as below:

The most positive opinions regard their current and past situations. Eight participants of this group were promoted to higher positions and were trusted by government and executives of organizations. They used the knowledge from the BBA program to integrate their responsibilities and duties. The important and necessary knowledge used regularly was leadership, human resource management, financial analysis, marketing, accounting, management information system and English, respectively. Most were positioned in direct businesses and responded according to their abilities and skills. These emphasized management systems with transparency, justice and dedication to work. Further, management has to learn constantly. The importance was to learn and deeply understand government political policy to bring organizations and all staff to meet the policies. The very important issue that management has to focus on is internal unity, such as taking care of each other when sick or special needs in either their line or their families that will make a warm working atmosphere. Most of them take pride in their assignments. This resulted in caring about customers, honest customer service, justice and paying attention to customers like God. The majority of the respondents wanted to continue functioning within the framework of their employment and keep developing their organizations. The reason is that management is a significant person of the company, organization, or investor that directly controls the company. Another role is the company or organization representative for the highest benefits.

Previous research has confirmed that authentic leadership is related to follower performance and organizational citizenship behavior (Walumbwa et al., 2008). Authentic leadership relates to group performance and group organizational citizenship behavior through the mechanisms of group trust, group positive psychological capital and teamwork (Hannah, Walumbwa and Fry, 2011).

Human Capital factors are another interesting topic for management. The study showed that the caring of management to their staff is one reason for a good workplace environment. Grdinovac and Yancey (2012) proposed that employees of organizations that used more caring adaptations and fewer uncaring adaptations will have greater affective and normative organizational commitment than the employees of organizations that use fewer caring adaptations and more uncaring adaptations. The result revealed that all groups of participants were full of leadership in their duty. This result relates to the study of Bhatti, et al (2012, p.192). Bhatii mentioned that leadership is a social influence process in which the leader seeks the voluntary participation of subordinates in an effort to reach organization goals. This is a process whereby one person exerts social influence over other members of the group, a process of influencing the activities of an individual or a group of individuals in an effort towards goal achievement in given situations, and a relational concept involving both the influencing agent and the person being influenced. This finding correspondent to Crook TR. et. al (2011). They noted that the management's job is viewed as guiding workers to choose the best paths to reach their goals, as well as the organizational goals. The theory argues that leaders will have to engage in different types of leadership behavior depending on the nature and the demands of a particular situation. It is the leader's job to assist followers in attaining goals and to provide the direction and support needed to ensure that their goals are compatible with the organization's goals

This result also revealed that management who pay close attention to their staff, give advice and return feedback to their staff have better organization management. Sommer and Kulkarni (2012) suggested that employees whose supervisors used constructive feedback had greater job satisfaction. Research also suggests that managers can also improve employee satisfaction by providing a good learning environment for employees (Alonderiene, 2010).

The previous studies have shown that job performance was influenced significantly by job satisfaction. A number of studies found that job satisfaction also had a significant impact on organizational commitment (Qureshi et al. 2011; Malik et al. 2010).

Response to research question three

3. What was the performance of BBA graduates who were working in operations?

The findings for the operation group in organizations and companies in Vientiane from the participants are as below:

These participants did not have much work experience or work related training. Seven of them worked in the direct business line after they graduated. They used most of the BBA knowledge for their work responsibilities, such as human resource management, psychology, English, information technology, financial, accounting, organizational behavior, and banking. In answering the question about the respondent's plans – whether he/she will continue the current employment – most of them liked their jobs. Some of them were rotated for several duties in their organization. However, some of them were looking for new jobs because of work pressure, and related work. They continuously learned more knowledge, were dedicated to work and willingly serviced customers. The work atmospheres were good with unity. However, sometimes they had unpleasant atmospheres such as hard work, work overload and limited chances for discussions. They needed talking skills and good personalities that respected other people, etc. These participants were in the operation group but they were people who inherited businesses or future management. Most operational participants agreed that they needed to be good at English, IT, finance and accounting to be confident looking for jobs and useful at work. They all understood their abilities and interests in order to find an appropriate way to build on their strengths and develop areas of weakness. They seemed to be highly motivated and their aim for learning English was for a better future, a better job and a higher salary. These participants found that work was different from the learning they did during university. Further, when faced with a stressful novel task, participants tended to engage in the more effective task-focused coping.

All the participants showed a good family organization style and caring workplace environments. This result is similar to Fu and Deshpande (2014) that a caring climate had a significant direct impact on job satisfaction, organizational command, and job performance. This is consistent with the findings of Meeusen et al. (2011) and Jamal. (2011). They found that work climate characteristics had statistically significant correlations to job satisfaction, such as making employees feel an important part of the organization's mission statement and providing sufficient opportunities to learn and to grow. Jamal. (2011) reported that organizational commitment has a significant impact on performance and it moderates the relationship between overall job stress and job performance in Malaysia and Pakistan.

Response to research question four

4. What were the perspectives of the BBA graduates toward the Faculty of Business Management, National University of Laos?

The findings for the former BBA students' perspectives towards the performance of the graduates who were working at organizations and companies in Vientiane Capital from the three groups of participants are as below:

All the former BBA students had similar agreements on several topics. They agreed that the BBA was a good program at an international standard, accepted by society and popular for both children and their parents. The BBA program contained many subjects with good details but mostly in theory not many practices. For the BBA program lecturers,

the participants agreed that they were good at devoting themselves to work even though they could not avoid some lecturers that missed classes or did not prepare lectures good enough and no cooperation between external organizations for internship students. They also commented about the BBA Program that should add English and IT knowledge since the current situation is online social life and the AEC era needs strong English as addition skills from academic ability. About student behavior, they found some students did not concentrate on studying, missed classes or were late. Another comment about the BBA program was the library. The library had good service but the textbooks were not up-to-date and there was not much variety. The internet system was a very important tool too. Another perspective is the FBM should focus and develop a better BBA program including support for advantage activities and collaborate with external organizations for internships. If we can develop good people then they will affect society and ccontribute to sustainable development.

It is clear that HRM plays a significant part in organizational performance. The effectiveness of HRM depends on more than the presence of good HRM practices: the manner and context in which these practices are applied play a vital role (Wright & Nishii, 2006).

Knowledge Attributes and Transformations

Knowledge is the primary strategic resource for organizations in a knowledge-based economy. To create value for oneself and an organization, knowledge must flow through and be embedded in the organization. Knowledge transformation held by individuals into intellectual capital for achieving a competitive advantage. Some of participants in operation group are task readiness, because of little knowledge or un-relevance knowledge to their works and need additional knowledge. After graduating from the BBA program, the participants received a profession and went to work. If they needed, for some reason, more knowledge in some areas, they may continue training or further study. Consequently, these participants, especially the operational group, were more likely to apply more effort, and motivate themselves to obtain the knowledge and experience that was necessary to belong to the organization. This result corresponds to the study of Tho & Trang (2015). They proposed that BBA knowledge and motivation are the factors that affect the transfer of knowledge from business schools to business organizations through in-service training students. However, none of the above-mentioned factors is sufficient for knowledge transfer. Instead, combinations of these factors are performance, leadership, teamwork, equity and work environment, customer service, human resource management, and human capital as Figure 1

Figure 1 Knowledge Attributes and Transformations
Source Developed by Researcher, 2016

Recommendations

Research Applications

This research could be used as information for the BBA Program to improve and develop program content to meet the requirements of business in current situations to prompt students for innovative business and overseas business investments. The study also recommends that the BBA program should focus on preparing students to solve a range of unforeseen or unknown problems by reinforcing new ways of thinking and acquiring new kinds of knowledge. This study results provide additional information that the program should add more English or set up an international BBA program to develop international standard courses. The other point to review is the instruction methodology of individual instructors. They need to use current information and more technology for classes. If the program could provide computers and other educational aids for students, that would benefit different students from different economic backgrounds. This will assist them to pay more attention to courses and achieve their goals.

Future Research

In carrying out this study, some limitations have been confronted that the participants were restricted to employees and self-employed in small to medium-sized service organizations. With a small sample of BBA graduates from NUOL, this study cannot discuss the overall performance and only two sample respondent was in the government section. Future investigations should be conducted using a quantitative research method to assess the generalizability of these findings by drawing samples from large organization and more samples. For example, a limited sample size did not allow the researcher to collect the data

and compare between small, medium and large business organizations, and the access to particular companies was unequal depending on organizations and participants cooperation.

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HRD Roles in Corporate Social Responsibility: The Review of Corporate Social Responsibility Concepts and Practices

■ ***Paratchanun Charoenarpornwattana***

Abstract: *Corporate social responsibility (CSR) has become an important aspect of managing a business in the 21st century. Interests in the role of business in society have been promoted by increased sensitivity and awareness of environmental and ethical issues. An increasing number of companies are adopting a variety of voluntary initiatives associated with improvements in environmental management systems and reporting on social and environmental performance. CSR is an important part of many business organizations. It is concerned with how a company tries to be beneficial to all its stakeholder groups. Many companies today run businesses with CSR especially big companies. They try to involve in activities that will keep both the business and social environment sound. The effects of CSR cannot be overemphasized; they range from companies running business well to environmental improvements. Today, competitors of some businesses already practicing CSR and beginning to embrace this new philosophy of business. The purpose of this article is to promote the awareness and conscious among Chief Executive Officers (CEO), academicians, and all stakeholders to create a positive impact in the society and the environment, provide companies with a guidance what is likely to be emerging over the coming decade and how stakeholders expect businesses to respond, and also to investigate HRD roles in the context of CSR concepts and practices.*

Keywords: Corporate Social Responsibility, Corporate Social Responsibility Concepts and Practices, HRD, HRD Roles

Corporate social responsibility (CSR) has become an important aspect of managing a business in the 21st century. CSR has become increasingly more important as a strategic focus in today's workplaces (Lockwood, 2004). Interests in the role of business in society have been promoted by increased sensitivity and awareness of environmental and ethical issues such as improper treatment of workers and environmental problems are of such magnitude that they are global concern (ADB, 2005). CSR is rising rapidly as a corporate priority. By 2011, the percentage of executives giving high priority to CSR is expected to be 70% (Franklin, 2008). An increasing number of companies are adopting a variety of voluntary initiatives associated with improvements in environmental management systems and reporting on social and environmental performance (Baxi, 2005).

Efforts to document and understand the antecedents and consequences of CSR for firms have been a major focus of research in recent years (Aguinis & Glavas, 2012; Peloza & Shang, 2011). Nowadays, CSR is an important part of many business organizations. It is concerned with how a company tries to be beneficial to all its stakeholder groups. Many companies today run businesses with CSR especially big companies. They try to involve in activities that will keep both the business and social environment sound. The effects

of CSR cannot be overemphasized; they range from companies running business well to environmental improvements. CSR can also go a long way to improve on product quality and service to customers. We wonder how companies run businesses with CSR in an adverse competitive business world. Today, competitors of some businesses already practicing CSR and beginning to embrace this new philosophy of business (Harnrungchalotorn & Phayonlerd, 2012). Aware of and interested in companies' CSR efforts, consumers weight them in their decision-making process. In short, CSR is now a consumer purchase decision criterion (Arli & Lasmono, 2010).

CSR is entering a new era where suppliers from developing countries have significantly increased in importance. It is almost becoming an obligation and responsibly many companies. Companies have an important role in the development of a society and environment because there is high demand in the marketing of products that companies offer product and service quality to their customers. However, companies have the obligations to do practice CSR.

According to study by Visser and Tolhurst (2010) one of the main drivers of increased CSR is growing globalization which brings benefits and disadvantages to economic development throughout the world giving businesses even more decisive role across all levels of society. Globalization has reinforced the relevancy of CSR in business operations. This is because globalization has introduced new challenges and opportunities emanating from increasing linkages between social, political, economical and environmental roles of businesses (Olajide, 2014). A survey conducted by CSM (2001), the perception of companies towards various parameters of CSR has been brought forward. The various dimensions of CSR valued by companies are national wealth, employment, environment and social program including health and literacy. Organizations have been integrating socially and environmentally oriented objectives into their responsibility frameworks to reinforce business strategy as well as to address the concerns of stakeholder groups. There has been much research conducted on the topic broadly defined, but the role of human resources in the CSR arena is still a relatively new and unexplored area of study (Inyang, Awa, & Enuoh, 2011).

The purpose of this article is to promote the awareness and conscious among Chief Executive Officers (CEO), academicians, and all stakeholders to create a positive impact in the society and the environment, provide companies with a guidance what is likely to be emerging over the coming decade and how stakeholders expect businesses to respond, and also to investigate HRD roles in the context of CSR concepts and practices.

Literature Review

The literature review briefly explores CSR definitions, CSR scope and concept, CSR benefits and outcomes.

CSR Definitions

The issues of CSR has been defined differently by various CSR developers, academicians and stakeholders, depending on their perspectives and expectation for the outcome of CSR to the society at large. CSR is highly complex and contentious issue among academics and practitioners. There is lack of consensus regarding definition and contents of CSR practices (Dahlsrud, 2008; Dobers, 2009; Carroll & Shabana, 2010; Taneja, Taneja, & Gupta, 2011).

CSR is a company's commitment to operating in an economically, socially and environmentally sustainable manner whilst balancing the interests of diverse stakeholders (Shanmugam, 2013). It is a concept whereby companies integrate social and environmental concerns in their business operations and in their interactions with their stakeholders on a voluntary basis (EU Commission, 2001). Carroll's (1991) proposed the CSR model states that four kinds of social responsibilities constitute total CSR was economic, legal, ethical, and philanthropic (Carroll, 1979, 1991).

In 2001, Commission of the European Communities defined that the voluntary nature of CSR is a concept whereby companies integrate social and environmental concerns into the business operations and interactions with the stakeholders. Similarly, CSR is a commitment for sustainable development, ensuring quality of workforces and development of local communities and society at large (Business and Sustainable Development, 2001; World Bank, 2004).

Business in the Community (2010) defined CSR as a company's positive impact on, and amelioration of negative impacts against, society and the environment, through its operations, products or services and through its interaction with key stakeholders such as employees, customers, investors, communities and suppliers**.** According to Carroll (1983), "CSR involves the conduct of a business so that it is economically profitable, law abiding, ethical and socially supportive. To be socially responsible then means that profitability and obedience to the law are foremost conditions when discussing the firm's ethics and the extent to which it supports the society in which it exists with contributions of money, time and talent" (p.608).

Corporate Social Responsibility Institute in Thailand defined CSR as internal and external practices of a company that recognize the impact to society both at the immediate level (i.e., secondary stakeholders such as competitors, general public) by using the resources within or outside the company to create harmony and happiness in the society. Vincent (2006) suggested that CSR is the continuing commitment by a business to behave ethically and contribute to the economic development, while improving the quality of the workforce as well as the local community and society at large.

From the above definition, CSR entails that companies should give back the benefits to the consumers and other stakeholders. This means that companies should not only be concerned with their profit but they need to help socially and environmentally. If the company doesn't have responsibility with the society, the people or non-government organizations (NGOs) will criticize the company. Thus, companies have to be responsible with other stakeholders and the social environment.

The Scope and Concept of CSR

The concept of CSR is underpinned by the idea that corporations can no longer act as isolated economic entities operating in detachment from the broader society (Shanmugam, 2013). CSR focuses on ethical and moral issue which impact corporate decision making and behavior. CSR is a concept that emphasizes responsive and extended social contribution of businesses to the society (Olajide, 2014). The main purpose of CSR is to ensure that firms are accountable to stakeholders.

Companies engage in CSR for many reasons that include the ability to operate now and into the future by acknowledging areas of harm, risk or opportunity that affect their well-being. In the today's business world, there are many strategies being used to run businesses. In the recent past, the topic of CSR has grown rapidly. People are starting to demand that

companies take their social responsibility seriously. Many companies have started to engage in CSR as a strategy in order to gain benefits that can give them an added advantage over their competitors. There have been increasing numbers of companies engaged in CSR to run their businesses. Nowadays CSR can drive companies to succeed in business by increasing sales volume and brand awareness (Harnrungchalotorn & Phayonlerd, 2012).

According to Porter (2008), the competitive advantage is the components of social and environmental points which have to go together because these are main factors to run businesses. Companies have to use workers, capital and natural resources in order to produce high quality products and services. Employees have to provide knowledge, working condition, welfares and career opportunity while companies and society will get benefits from protecting environment. Since the decreasing waste and pollution will help company to reduce natural resources and increase products including generating customer values and creating a new market.

CSR is a long term strategies for every company or industry. It relates to responsibilities to social, environment, economic which social and environmental CSR's concept is supporting for long run company's benefits. CSR is the best way to communicate with all customers and stakeholders efficiently. As they can touch with values of service brands and the company will receive the good resonances from all stakeholders (Enquist & Edvardsson, 2009). Other scholars argue that business have some obligations and responsibilities towards society; hence, they should do something for the benefit and welfare of the society (Gifford & Kestler, 2008). This is consistent with the assertion of Carroll and Buchholz (2011) who stated that CSR includes economic, legal, ethical, and philanthropic expectations placed on businesses by the society. Along with Zadek (2000) suggested that firms engage CSR strategies to protect or defend their reputations; justify benefits over costs; integrate stakeholders into their strategies; and understand, innovate and manage risk.

Many public companies have developed extensive CSR programs designed to generate stakeholder goodwill and boost market value. (McDonald, Lynette, Rundle-Thiele, & Sharyn, 2008). CSR requires companies to consider the interests of all stakeholders including investors, suppliers, consumers, employees and the community in going about its business. (Cronin, 2004)

In general, there is an increasing pressure around the globe from both corporate and societal stakeholders on corporations to engage in the attainment of important social and environmental goals for sustainable development (Alsop, 2005; Franklin, 2008). Furthermore, engaging in CSR initiatives can be very challenging in practice. It seems that most companies struggle to effectively manage their CSR engagement (Bhattacharya, Korschun, & Sen, 2009; Porter & Kramer 2006).

One factor that has made it necessary for companies to integrate CSR into their corporate strategies is the general public's growing interest in and better knowledge of social and environmental problems. With the emergence of public standards for social performance, society is putting companies under strong pressure to embrace CSR and embrace new approaches in their business strategies, such as, for example, green innovation, social entrepreneurship and new models of philanthropy (Pirsch, Gupta, & Grau, 2007).

To summarize, company should comply CSR with the law and regulations, be ethical, and provide societal value and accountability. CSR practices are shaped by the policies, positioning, and programs of the business to promote a positive impact to the social, environmental and financial success of the company, while recognizing the right of the stakeholders, customers, employees, shareholders, communities, and environment in all

aspects of their operations. CSR initiatives do not just involve spending money to become a socially responsible; it also involves a change in business practices and internal operations.

CSR Benefits and Outcomes

CSR has received an increasing amount of attention from practitioners and scholars alike in recent years. Current concept of CSR has turned it into an instrument of achieving competitive advantage, not only on voluntary basis but as a necessity to survive in the competitive markets. CSR enables companies to build better relations with primary stakeholder, such as customers and employees, helping them to develop intangible, valuable assets which can be sources of competitive advantage (Hillman & Keim, 2001). Langford and Smith (2009) shows by listing three profitable CSR areas for business as risk-reduction, financial investing and commercial benefits.

As well as, Hawkins (2006) views the benefits outside profitability as "traditional ethos of 'profit at all cost' is wrong, good health and safety supports efficiency, environmental consideration supports community commitment, and responsible management provides investor confidence". Altogether CSR fulfil all three bottom lines of business for people, planet and profit. The report documents some of the potential bottom line benefits as reducing cost and risk, gaining competitive advantage, developing and maintaining legitimacy and reputational capital, and achieving win-win outcomes through synergistic value creation (Carroll & Shabana, 2010).

Acts of CSR should, for example, increase identification and commitment to the organization, organizational citizenship behaviors, and meaningfulness of work (e.g., Aguilera, Rupp, Williams, & Ganapathi, 2007; Ellemers et al., 2011; Rodrigo & Arenas, 2008). CSR should also enhance firms' ability to attract and keep top talent (e.g., Albinger & Freeman, 2000; Greening & Turban, 2000). Shows of CSR make accounting work potentially. There is emerging evidence that effectively implemented, CSR can have significant impact in motivating new entrants, developing and retaining staff.

CSR practices have become a component of business organization that enhance competitive advantage and long-term sustainability (Rodriguez-Melo & Mansouri, 2011; Kemper et al., 2013; Monowar & Humphrey, 2013). CSR benefits both the society and business for improved performance and social reputation (Monowar & Humphrey, 2013; Peloza, 2009). A survey of more than 300 CFOs, investment analysts, and CSR experts reports that the vast majority believe the most important way these programs create value is by enhancing the company's reputation (McKinsey & Company, 2009) and engendering goodwill among customers. (Chernev & Blair, 2015). A recent McKinsey global survey shows that 76% of executives believe that CSR contributes positively to long-term shareholder value, and 55% of executives agree that sustainability helps their companies build a strong reputation (McKinsey, 2010).

The benefits of CSR for companies, including increased profits, customer loyalty, trust, positive brand attitude and combating negative publicity, are well-documented (Maignan & Ferrell, 2001; Sen & Bhattacharya, 2001; Sen, Bhattacharya, & Korshun, 2006). CSR is therefore most effective at improving consumers' attitude towards the company, enhancing consumer loyalty as well as downsizing the level of consumer skepticism, i.e., reducing consumers' concerns and doubts regarding the company's products and services (Pirsch, Gupta, & Grau, 2007). Furthermore, research indicates that CSR influences financial performance and market value through factors such as customer satisfaction, and fine avoidance (Webb, Mohr, & Harris, 2008).

HRD Roles in the Context of CSR

Hittner (2008) suggested that a vision and the average employee is mystified or indifferent. Companies can engage CSR with all employees at every level on things that matter to them. By ensuring that all of employees are part of the solution, companies can tap into new opportunities for innovation, drawing out talents and abilities from they may not even know their employees have. That might take the form of grand challenges where groups collaborate to innovate around a common goal, like developing a new product that has societal or environmental benefits. Or it might be a program in that rewards employees to take individual actions that collectively make a significant difference.

Academy of Human Resource Development (AHRD, 1999) has produced standards on ethics and integrity to provide guidance for HRD professionals engaged in practice, research, consulting, teaching, and facilitation. Although these principles are aspiration in nature, also provide standards of conduct and set forth a common set of values. Adherence to these standards builds further definition and clarification of HRD as a profession.

A landmark international CSR study of human resource practitioners conducted by the Society for Human Resource Management (SHRM) in 2006, reveals that CSR practices are seen as important to employee morale (50%), loyalty (41%), retention (29%), recruitment of top employees (25%) and productivity (12%) (SHRM, 2007, p. 27). Charoenarpornwattana, Sakulkoo, and Tubsree (2015) suggested the valued human resources for organization as "the company has in place a HRM and HRD policy for every level in order to increase employee's skills and knowledge, and for the company to have efficient manpower for better organization performance". Human Resource Practices started from a change in the management's outlook, from asking how to make employees love the company, and how to make the company loved and admired by the employees. The company started to pay attention to the development of intra-company relationships, in parallel with restructuring and improvement of work methods (Charoenarpornwattana, 2016).

HR managers are well positioned to play an instrumental role in helping their organization achieve its goals of becoming a socially and environmentally responsible firm – one which reduces its negative and enhances its positive impacts on society and the environment. Further, HR professionals in organizations that perceive successful CSR as a key driver of their financial performance, can be influential in realizing on that objective. While there is considerable guidance to firms who wish to be the best place to work and for firms who seek to manage their employee relationships in a socially responsible way, there is a dearth of information for the HR manager who sees the importance of embedding their firm's CSR values throughout the organization, who wish to assist the executive team in integrating CSR the company's DNA. Indeed, HR's mandate to communicate and implement ideas, policies, and cultural and behavioral change in organizations makes it central to fulfilling an organization's objectives to integrate in CSR activities. It is important to understand that employee engagement is not simply the mandate of HR. Indeed people leadership rests with all departmental managers. HR can facilitate the development of processes and systems; however, employee engagement is ultimately a shared responsibility. The more the HR practitioner can understand their leverage with respect to CSR, the greater their ability to pass these insights along to their business partners towards the organization's objectives in integrating CSR throughout their operations and business model.

As HR influences many of the key systems and business processes underpinning effective delivery, it is well positioned to foster a CSR ethic and achieve a high performance

CSR culture. Human resource development can play a significant role in all CSR activities. HR can be the key organizational partner to ensure that what the organization is saying publicly aligns with how people are treated within the organization. HR is in the enviable position of being able to provide the tools and framework for the executive team and CEO to embed CSR ethic and culture into the brand and the strategic framework of the organization. It is the only function that influences across the entire enterprise for the entire 'lifecycle' of the employees who work there – thus it has considerable influence if handled correctly. HR is poised for this lead role as it is adept at working horizontally and vertically across and within the organization, so important for successful CSR delivery (Strandberg, 2009).

HRD professionals are aware of their professional responsibilities to the community in which they work and live. The role of HRD managers within organization will be better recognized. An increase in professional courses and better quality, education on CSR will help to increase the understanding of what CSR is and the value of having a CSR function within the organizations. A growth in certification and qualifications around CSR will help to enhance both the professionalism and the credibility of CSR managers, understand a healthy economy, healthy organizations, and a healthy eco-system are intricately interconnected, apply and make public their knowledge of learning and performance in order to contribute to human welfare, concerned about and work to mitigate the causes of human suffering. When undertaking research, strive to advance human welfare, human development, and a sustainable future, avoid misuse of work, comply with the law and regulations, encourage the development of law and social policy that serve the interests of stakeholders, public, society, community, and environment. As well as, encouraged to contribute a portion of the professional time to enhance societal, organizational, human, and environmental development for little of no personal gain or advantage.

Recommendations

HRD purpose is to strengthen human and assisting developing countries in building institutional and organizational capacity through HRD activities by transfer of knowledge and skills, exchange of experience and know-how, training and human capacity building to improve the employee's competencies.

The HRD professional activities will in particular address the capacity development needs of policy makers, requirement of government regulators and direct support will be provided for HRD by CSR activities to responding the needs of countries. This has allowed the HRD professionals to achieve considerable improvements in terms of reaching a larger target population at a lower cost; facilitating the participation of high level staff; delivering and providing the best available training quality; promoting self-development attitudes among the participants, and providing practical schemes for continuous training and development.

Furthermore, companies need to have stakeholder engagement; new look at business models; HRD by increased staff role in contributing to the social and environmental activities; action on climate change; and emphasis on community investment.

Conclusion

This article shows that CSR has important and relevance to a company's profitability in recent years. Companies are recognizing that CSR initiatives represent opportunities for improving profitability through various community, based programs that respond to local

needs, while others are also finding ways to use what there are already doing to gain a CSR related advantage over the competitors. The article also shows that the key to success in using any type of innovation to a company advantage from the CSR perspective.

CSR is not a fad or a passing trend, it is a business imperative that many companies are either beginning to think about or engaging with in one way or another. A successfully implemented CSR strategy calls for aligning these initiatives with business objectives and corporate values thereby integrating CSR across the business functions and enhancing business reputation. The challenge for companies is to apply fundamental business principles to make CSR sharper, smarter, and focused on what really matters.

This can be done by focusing on priorities; allocating finance for treating CSR as an investment from which returns are expected; optimizing available resources by ensuring that efforts are not duplicated and existing services are strengthened and supplemented; monitoring CSR activities closely with implementation partners such as NGOs to ensure that initiatives really deliver the desired outcomes, and reporting performance in an open and transparent way so that all can celebrate progress and identify areas for further action.

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Teachers' Experiences in Developing Educational Innovation: A Case Study of Primary School Teachers in Education Service Area Two of Nakhon Sawan Province, Thailand.

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Abstract : *This research investigates the factors motivating school teachers to innovate, as well as exploring the challenges for school teachers to create educational innovation. A phenomenological qualitative research study was conducted with 16 teachers, 3 education advisors, and 3 school principals. In-depth interview was chosen as the main data collection technique. The preliminary results of the research show that there were main factors that motivated school teachers to develop educational innovation, which are getting inspiration from their students, educators and school principals, knowing the importance of innovation. Factors that lead school teachers to not develop educational innovation, which consists of discouragement from educators, not receiving clear instructions from training courses, not getting support from schools and having workloads that were too heavy. The unmotivated factors led the researcher to set up a focus group to gain suggestions from educators, which consist of giving more encouragement, encouraging teachers to be positive thinkers, doing a survey and discussing interesting training topics, setting up a social network community, setting up a time for discussion between education advisors and teachers, setting up a team to do the school's works that would reduce the workload. This study could be the starting point which leads education advisors and school principals to provide teachers with the necessary support to increase innovation in the future.*

Keywords : Education Innovation, Innovation Development, Creating Innovation, Innovation Development Difficulties, Motivation Creating Innovation

Introduction

It is well known that education is one of the most important factors for developing a nation, and that education is commonly and formally divided into stages such as preschool, primary school, secondary school and then college, university or apprenticeship. The methodology of teaching is called pedagogy. The study indicates the progression of the world. It can be seen that the world evolves at all times. Developing and inventing something new is a particular cause of the progress of the world (Smith, Nemser and McIntyre, 2008, p. 570).

In the world of education, innovation comes in many forms. There are innovations in the way education systems are organized and managed, exemplified by charter schools

(alternative school) or school accountability systems. There are innovations in instructional techniques or delivery systems, such as the use of new technologies in the classroom. There are innovations in the ways teachers are recruited, prepared, and compensated. (U.S. department of education, 2004)

Some teachers think that their responsibility is only teaching but they may overlook some important points, such as creation and innovation which are also important for teachers and it should be a part of teachers' responsibilities. How can education breakthrough if it never creates or innovates? While many charter schools and charter organizations are making huge improvements in educational outcomes for students, most are not new or different. Many of the proposed improvements in teacher education and evaluation, student assessment, and school design in traditional public schools do not seem to be novel (Lenz, 2010). So, the challenges that face improving learning and life outcomes require true innovation. Need solutions that are both different and better.

Everyone can gain knowledge everywhere all the time, but nowadays the world needs something new. Pure theory still can be the basis of innovation. Innovation is needed all over the world. Likewise, in education, teachers are the important key to reach the goal by developing innovation such as curriculum, new theories or teaching designs.

Education service area 2 provides training courses to train the teachers to be innovation creators to develop education in each school. They have invested in this every year but the results are still questionable, as why some primary school teachers not decided to create any innovations? However, some primary school teachers do create new innovations for their classes, schools and education service area.

Therefore, this research investigates the factors motivating school teachers to innovate, as well as exploring the challenges for school teachers to create educational innovation.

Research Objective

The objectives of this study are to investigate factors motivating school teachers in developing educational innovation; to investigate the challenges impeding school teachers in creating educational innovation; and to propose some solutions and ways to improve the situation from the perspective of education advisors and school principals.

Research Questions

Based on the objectives, there were three research questions:

1. Why do some school teachers develop their own educational innovation?
2. Why don't some school teachers develop their own educational innovation?
3. What are possible ways in which education advisors and school principals can increase the number of educational innovations?

Literature Review

Teachers' Responsibilities in Developing Educational Innovation

Teachers also have an important responsibility, which is creating educational innovation which includes instruction media, new teaching techniques and classroom research. Jongpradapkeart (2010) claimed that teachers need to do research and innovation to develop their work to be accepted by society because a 'teacher' is a highly-respected professional who always improves cognitive development and social development. Teachers need to do

research to find new ways for improving students' learning and development. The research is a method that allows them to improve student learning with the most trustworthy result. The teachers and education personnel regulations act (Cooze, 2006) provided that teachers need to do research for academic promotion. In principle, the position and perceived academic standing of teachers will be considered by submitting their work for assessment which is research and academic performance.

Challenges and Obstacles of Teachers Doing Their Work

The teacher's challenges could come from many dimensions including education procedures and education human resources. Clark (2010, News and Features from the National Education Association) said that parents also could be obstacles for teachers, teachers wish for the kind of parent involvement that supports learning. Elusive parents usually have a reason for their mysterious ways such as language fluency and time management.

Lopez (2009) referred to challenges teachers encountered in teaching students from other cultures as follows: attitudes of students toward tolerance of other races, cultures, cultural misunderstandings/social cues; cultural differences on behavior (eye contact, etc.) and differences in signs of respect, honor; culturally related traditions or standards that prevent or hinder a student's compliance with class or school rules and regulations, religious and moral beliefs that might influence the child's behavior when playing with or relating to other children on the playground; culture differences that impact learning; dealing with parents and their cultural ideas, expectations, acceptance of their children's transition time. Sometimes dealing with my being female to a certain male who finds that a cultural problem.

Innovation and Education Innovation Development

Innovation is a term of education which appeared in the Ministry of Education's terminology of education book page 95, the word innovation comes from Latin which is 'Innovare' which means to renew or to modify (Jaisaart, 2008). Hughes (1971) gave a definition of innovation that is adopting a new approach into practice after experimenting and developing from 3 steps, which are: 1) invention, 2) development, and 3) implementation. According to Morton (1971), innovation means renewal; this represents an improvement of old things and develops the potential of the individual and organization.

Beattie (2006) divided the importance of educational innovation into six main areas which consist of: the base notion of created innovation comes from motivation and interest in some areas; innovation designs to solve a problem; innovation can reduce some expenses; innovation can lead the learner to gain knowledge faster; encourages teachers and students to be creative and develop thinking processes; and innovation increases the quality and quantity of work.

Education Service Area 2

The Education service area's emphasis is on human resource development in many factors which are teachers who have to develop knowledge and practical competencies; educated teachers about creative thinking to support and evaluate students individually; teachers who can use instructional media by themselves and can use the technology as well; teachers are evaluated by other school teachers (including from the same school and outsource teachers) and supervisors; developing school administrators; and educating teachers to be professionals who can develop innovation, to have the apparent reward in the education field.

Research Methodology

A qualitative research approach was considered the most effective one for this study.

Lea (2015, p. 5) claiming that "The design is the structure of any scientific work. It gives direction and systematizes the research. The method you choose will affect your results and how you conclude the findings". The knowledge claims in this study, therefore are what school teachers view as situations about developing educational innovation. To explore their inner experiences, a qualitative approach seems to fit this study. The type of qualitative strategies and theoretical perspectives of this study is a phenomenology study. Creswell (1998) suggested the phenomenological strategy could help to understand the essence of experiences about a phenomenon. Its discipline originated from philosophy, sociology and psychology. The researcher of a phenomenological study could have long interviews with up to ten people and he or she could analyze statements to find out the meaning, themes and general descriptions of the experiences. The researcher, therefore, considered that as this study involved both the study of Psychology and Sociology, focusing on understanding of what were school teachers' experiences in creating educational innovation, phenomenological qualitative study was the most appropriate approach in this research study.

Data Collection

According to Creswell (2007, p. 117), "data collection offers more instance for assessing research design within each approach to inquiry". Creswell suggested a circle of interrelated activities which consisted of 1) locating a site and individual, 2) gaining access and making rapport, 3) sampling purposefully, 4) collection data, 5) recording information, 6) exploring field issues, and 7) storing data. The data collection circle is shown below in Figure 1.

Figure 1: The data collecting activities circle
Source: Creswell, 2007, p. 117

To identify the population and informants in this study, the researcher followed the steps of data collecting activities suggested by Creswell (2007) and the detailed descriptions are presented below.

Locating a site and individual: the researcher determined the number of population and their locations.

Table 1 Number of school teachers who were informants per each district

District	Number of School teachers
Banphotphisai	4
Ladyao	4
Meawong	2
Meapern	2
Shumtabong	2
Total	15

As presented in Table 1. The researcher tried to intersperse the number of school teachers to ensure that all districts were under education service area 2.

2) Gaining access and making rapport provided a formal letter explaining about the details in the study, research objective, and data collection methods. Also, consent letters by the Faculty of Education, Burapha University were sent to all informants in this study.

3) Sampling purposefully, this step aimed to identify the

Informants' characteristics and then identify teachers who met the criteria.

Around 10 to 20 teachers, who were willing to be informants in this study, returned their completed consent forms. The researcher set up the criteria of potential informants. These consisted of; 1) informants must be teachers working under education service area 2, 2) the researcher invited 5 teachers who had received reward in producing Education innovation in the last 5 years as well as those who did not receive any awards in educational innovation in the last 5 years.

4) Collection data: the researcher discussed with each informant and called for the interview at their workplace. The researcher also asked them to recommend a private, quiet room so that the conversation would not be interrupted. Before the interview, the researcher had developed good rapport with the informant in order to develop trust and gain the most useful information from them.

5) Recording information: the researcher asked for each informant's permission before recording the conversation. The researcher also took notes during the interview in case some useful non-verbal communications was displayed.

6) Exploring field issues: the researcher tried to notice and solve possible challenges which may have happened during the interviews and focus group.

7) Storing data: the researcher backed up the interviews both on 2 personal computers as well as uploading them into online storage in the evening after interviewing and doing the focus group interview.

Data Analysis

Guba and Lincoln (1989, p.181) claimed that "after the data collection is finished, the next step that researcher need to do is data analysis". The suggestions for narrative analysis present a general template for qualitative researchers of phenomenology; there have been specific structured methods of analysis which were proposed by Stevick-Colaizz-Keen (Moustakas, 1994). In this study, the researcher followed steps of data analysis which was the Stevick-Colaizz-Keen method as providing the most practical useful approach in phenomenology (Moustakas, 1994).

The data analysis approach of Stevick-Colaizz-Keen method was discussed by Creswell (2009, pp. 193-194), as follows: "**First**, Describe personal experiences with the phenomenon under study. The researcher begins with a full description of this or her own experience of the phenomenon. This is an attempt to set aside the researcher's personal experiences (which cannot be done entirely) so that the focus can be directed to the participants in the study. **Second**, develop a list of significant statements. The researcher then finds statements (in the interviews or other data sources) about how individuals are experiencing the topic, lists these significant statements (horizontalization of the data) and treats each statement as having equal worth, and works to develop a list of non- repetitive, non-overlapping statements. **Third**, take the significant statements and then group them into larger units of information, called "meaning units" or themes. **Fourth**, write a description of "what" the participants in the study experienced with the phenomenon. This is called a "textural description" of the experience- what happened-and includes verbatim examples. **Fifth**, write a description of "how" the experience happened. This is called "structural description," and the inquirer reflects on the setting and context in which the phenomenon was experienced. **Finally**, write a composite description of the phenomenon incorporating both the textual and structural descriptions. This passage is the "essence" of the experience and represents the culmination aspect of a phenomenological study."

Discussion

In responding to the first research question, it has been found that the teachers who developed education innovation have inspiration from many factors, which are: 1) their students; 2) support from educators; 3) perceiving the ease of advancement in education innovation and technology: 4) seeing their own potential in solving educational challenges: 5) aware of the importance of education innovation;6) personal interests; 7) support from the family; 8) experiencing teaching problems; 9) seeing professional development opportunities; 10) getting inspiration as role models and 11) devoting themselves to help society.

In discussing the findings relating to the first research question, most informants expected to develop self-ability and students' ability at the same time. Moreover, developing educational innovation is a possible way to get promoted by the school principal or from the Ministry of Education. In addition, positive thinking toward problems and finding the ways to handle encountered problems are the factors motivating teachers to develop at least one educational innovation.

Obviously, this study found that factors which motivated teachers to develop their educational innovation were problems in their classrooms, teaching problems, time management problems, or students' poor performance. In addition, some teachers personally liked producing one. It seems to be their own self-directed learner attitude. Many of this

group of teachers is lifelong learners. This has been supported by Watson (2003, p. 3), who defined "lifelong learning" as:

> *...a continuously supportive process which stimulates and empowers individuals to acquire all the knowledge, values, skills and understanding they will require throughout their lifetimes and to apply them with confidence, creativity and enjoyment, in all roles circumstances, and environments.*

Response to Research question Two: This research question revealed that the teachers who decided not to develop education innovation had many problems and had different perspectives from the group of teachers in research question one. Some of the teachers in this group tried to do their best but gave in to the many obstacles which they faced. Some of them were waiting for the appropriate time to develop education innovation again. The twelve factors that made teachers stop doing their education innovation and decide not to develop education innovation were: 1) discouragement from other people; 2) finding the difficulties in developing education innovation; 3) not receiving clear instructions regarding the proposes and how to develop educational innovation; 4) not being able to expect help from education advisors; 5) not seeing any possibility in transferring trained knowledge to their education innovation work; 6) lacking the energy to develop education innovation; 7) having personal problems; 8) not getting support from schools; 9) having too many education responsibilities; 9) limited budget; 10) teaching unmotivated students; and 11) having workloads that were too heavy.

Possible answers which could address the second research question 'Why don't some school teachers develop their own educational innovation?' include most teachers who had not submitted any educational innovation were those who were disheartened from their hard work and feeling spiritless for not getting the necessary support. This study found that there were certain difficulties which impeded them from producing one. These were the lack of the necessary know-how. It was reported that some teachers did not know how to work on a computer or search for information from the internet. Not being able to do some research on the internet, teachers could neither educate themselves nor produce their educational innovation. Moreover, knowledge management in a school was a problem viewed by some teachers. They could not adapt or apply what they had learned from their training courses to things they wanted to do. Furthermore, they were not comfortable enough to make themselves understand the difficult terminology taught by their instructors or suggested by the education supervisors. Things, such as a gap between education supervisors and the teachers, discouraging words given by their principals, co-workers, and other educators were also important barriers stopping these groups of teachers from producing one educational innovation. Some even decided to give up halfway through the process of producing one. Last but not least, teachers' lack of time management and limited students' learning ability were listed as negative factors for teachers to do one since they could not have much energy left at the end of their hard-working day.

Despite the above discouraging factors, some teachers reported that they only wanted to take a rest and waited for the time they could gain their energy back and continue completing one. Additionally, some teachers planned to propose one once they had enough budget and inspiration or enough motivation to go on. This has been supported by Reeve (2005, p. 20), who defined "A framework to understand the study of motivation" as the figure 2 below:

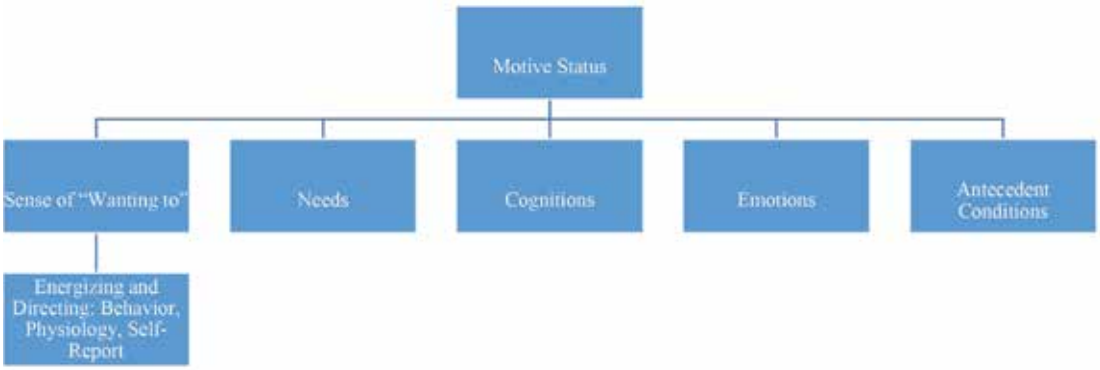

Figure 2: A Framework to Understand the Study of Motivation
Source: Reeve, 2005, p. 20

Response to the final question about what are the possible ways which education advisors and school principals view as solutions to increase the number of educational innovations, it was found that the education advisors and school principals were quite astounded by the teachers' perspectives. Although, it was found that the education advisors and school principals were willing to solve the teachers problems by recommending the following: 1) principal discusses and encourages school and teachers to do their best in this profession; 2) raising and giving some rewards to outstanding teachers to be role models for other teachers; 3) leading teachers to be positive thinkers; 4) recommending teachers to know the possible ways to find knowledge, such as searching from the internet, quality books and asking others; 5) encouraging teachers to be aware of the good results of developing education innovation; 6) making an attitude adjustment of the school principals, to know that education innovation is very important and it can help students and schools to be better; 7) principals need to do their work with honesty and manage the school budget appropriately; 8) do a survey before setting up a training course about which topics or activities teachers are interested in; 9) meeting with instructors about the appropriate way to present in the training course. Try to use simple words to explain while teaching; 10) developing a handbook for teachers in the topic 'Educational theories' and 'important words which teachers should know' and send to every school; 11) setting up a 'Line group' (instant messaging) or developing a specific blog or forum about education innovation development to make discussion easier between teachers and education advisors; 12) setting up a time for discussion between education advisors and teachers; 13) setting up activities to strengthen the relationship between teachers and advisors; such as trips or visiting each other; 14) education advisors try to gain more knowledge and be self-directed learners; 15) setting up a team do the school's work that would reduce work and could make teachers have more inspiration to work; 16) opening teachers' minds to discuss with school principals about education tasks, teachers can request to work in the appropriate area of each teacher.

It could be seen that from the education advisors' recommend and the school principals' view as solution ways toward teachers' obstacle in developing educational innovation are very helpful for school teachers, if all of educators could work as a team and having good communication between each other that may exactly reduce all teachers' problems in developing educational innovation and that would be the advantages not only for all educators but also students. Shonubi and Akintaro (2016, p.1906) wrote in The International

Journal of Social Sciences and Humanities Invention on topic of The Impact of Effective Communication on Organizational Performance as follow:

"…The importance of communication shall be looked at from the study of Moorhead and Griffin (1989) which state that manager transmits information for a variety of reasons as highlighted in Obamiro (2008): 1) to achieve coordinated action 2) to express feelings and emotion 3) to share information regarding: - organizational goals, - task directions, - results of efforts, - decision making, 4) to achieve effective control, 5) to encourage staff participation in decision making, 6) To create a good public image and reputation for an organization"

HRD intervention

The researcher as a student studying in the Human Resource Development Program would like to share some solutions towards unmotivating factors as presented above which lead teachers to decide not to develop educational innovation.

Teachers' minds and health problems are one of the problems which were reported by the school teachers, examples of these problems are discouragement from other people, lack of energy to develop education innovation, and having personal problems. Happiness affected work quality, some teachers do not develop education innovation because they lack the energy or fatigued from working for several years. Nonetheless, some of the teachers who worked for many years still continued to develop educational innovation. In the human resource development field, psychology would be very useful in improving this situation. Positive reinforcement from school principals and co-workers are very important for people who are disheartened, some examples for giving positive reinforcement are recognizing them or giving them a reward to make them feel that they are still recognized by other people. Another suggestion is setting up a small exercise place in the school so they can do activities together. Not only can school teachers be healthier but also, they can have better relationships with co-workers.

Teacher's knowledge in developing education innovation problems and education innovation training course problems are the problems that school teachers most talked about, including they found that developing of educational innovation is very difficult, they can't receive clear instructions regarding the proposes and how to develop educational innovation and do not see any possibility in transferring trained knowledge to their education innovation work. In the HRD field, these kinds of problems may be solved by training programs, such as 'attitude adjustment programs that means we need to educate school teachers by letting them do some basic or simple innovation. These would be helping them to have more confidence to develop more educational innovation. Some solutions for the problems about teachers who are not receiving clear instructions from the trainer and their lack of knowledge to develop educational innovation would be solved by well-organized selection of the trainer process.

Good selection of the trainer would help Education Service Area Two to reduce these kinds of problems. It can be seen that the human resource development field, especially the training and development part are very crucial and relate directly to the education circle, it could help educators to manage and more easily find solutions for all of the problems. Human resource development could help educators and also enhance the knowledge, skills, and attitudes of individuals to do particular and complicated work and job tasks. In addition to having good selected trainer, teamwork is important for succession of doing all education job. HRD field also emphasis on team building. Werner and Desimone wrote about

'teamwork' as following "…team building is as process used to improve a work group's problem-solving ability and effectiveness." (2012, p.495)

Recommendations for Further Research

Since the main limitation of a qualitative study is not being able to generalize the findings to others schools or other Education Service Areas in Thailand, it would be beneficial to develop research topics investigating situations of educational innovation production in other local Education Service Areas.

Another limitation of a qualitative study is the data collection technique which could mainly gain subjective data from the in-depth interviews. After finding out factors encouraging and discouraging school teachers to produce education innovation, it would be also be better to do some quantitative studies to survey the viewpoints of the majority of school teachers under this Education Service Area.

Third, it can be seen from the research findings that problems concerning poor management skills, time management, and knowledge management are very important for working in the education field. It would be great if educators could investigate which training courses are effective, necessary and suitable for teachers.

Fourth, it can be seen that discouraging words from other people was one of the reasons causing teachers to stop developing educational innovation. This shows that, good knowledge involving psychology is influential for teachers' energy in developing educational innovation and doing their work. It would be a benefit if further studies should find out which positive reinforcement and cognitive dimensions are suitable for school teachers.

Conclusion

Teachers' abilities in producing educational innovation are a fundamental factor for the growth of national education and it is one of the teachers' responsibilities to generate them. This study provides evidence that some primary school teachers in Education Service Area Two of Nakhon Sawan province neglected to figure out certain needs for their professional development and improve their potential to develop educational innovation. This study also gathered solutions and ways to improve the situation from the viewpoints of school principals and education supervisors. The researcher of this study hopes that the findings presented in this study could more or less enhance the national education quality through the improvement of school teachers' capabilities in using their full potential to do their work which lead to the overall development of national human resources.

School principals' perspectives in managing school budgets are the main factors which lead each school to be successful. The researcher was concerned about the answers of the school teachers which reported about budget managing of the school principal. It can be seen that some of the school principals focused on enhancing the school's environment and spent the education innovation budget to enhance the school's appearance. For example, renovating the meeting room to be more luxurious, buying many big trees, and building a big new building. The question is what the first main objective of the school is?' the answer should be 'to educate students'. So, it would be better if all the principals allocated the school budget appropriately.

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Teacher Self-Development as Researcher in Lesson Study and Open Approach Context: A Case Study of a Grade 1 Teacher

■ **Rachada Chaovasetthakul**

This research analyzes the development of a teacher as a researcher in the Lesson Study and Open Approach Context for the Mathematics Professional Development with Lesson Study and Open Approach Innovation program. The teacher had had more than 20 years of teaching experience before joining the program in 2006 until 2013. The ethnographic paradigm used in collecting the data provided in-depth information during the 2010-2015 academic years. The data collected from the documents, video, and the interview protocol, were analyzed. Analytical information was obtained from the teaching practice in relation to the teacher's professional development, relevant to the implementation of the Lesson Study process. The findings show that (1) In the forming stage of the corporate lesson plan, the teacher has realized the problem, of allowing her to plan better lesson management to improve her teaching; (2) In the implementation stage of the Open Approach in a classroom, the teacher had observed problem solving abilities of students. She recorded their thoughts as input for her reflection on the result of thelesson study; and (3) In the reflection stage with the Lesson Study team, the teacher and the team analyzed the result of the lesson management, problem solving abilities of students and media usage from the observed data.

Keywords: Teacher as Researcher, Lesson Study, Lesson Study and Open Approach Context

Introduction:

One of the major problems with Thai teachers is conducting research. To this point, Associate Professor Dr.Suladda Loipha and Assistant Professor Dr.Maitree Inprasitha (Loipha & Inprasitha, 2003) posited that most Thai teachers consider research to be a difficult process even when they acknowledge the relevance of classroom research and its potential to solve teaching and learning problems. For them, conducting research is time-consuming and affects their teaching and learning schedules. They also lack competence in research methodology. Nevertheless, teachers in other countries around the world are also as guilty of this situation similar to Thai teachers.According to Parsons and Brown (2002), when it comes to "research" for many teachers, there may be confusion, worries and problems of using a large number of samples requiring expertise in statistics and computer analysis. Many teachers feel that they lack the essential skills and motivation needed to be a researcher, or even "take action"based on research.

In Europe and America, there is a movement in educational research by the people involved with real classesand real instruction. The instructors themselves have been collecting the data to the extent that many educators and agencies are now involved in promoting self-directed teachers. McCutcheon (1981) claims the traditional model was that the researchers were outsourced to doing classroom research which resulted in the

dissatisfaction of the teachers in this model.(You must i8ndicate page number for a direct quotation). For example, outsiders often have questions about a small number of teachers. When teachers were trained, they were not told to do research. Therefore, they believe that they have to do their own thing while the outsiders just give advice on what they should do. Also, external researchers often conduct research at specific times. This may result in inaccurate information. Lerman (2010) stated that even attending the International Group for the Psychology of Mathematics Education in the 1980s and 1990s was a problem to most teachers as only a few attended the conference and often, did not pay attention to the conference activities. Presentation of classroom work (practical work) did not receive the attention it deserved.

Many educators have studied and researched the research needs of teachers. Lewis (2002) and Lewis, Perry, and Hurd (2009) pointed out that Lesson Study is a system of research and development. This helps the teachers to adjust their concept of best practice through careful classroom study. One of the principals in the United States, Liptak, (cited in Lewis, (2002)(Delete first name and date of publication required)applied the Lesson Study in her school and proposed that the Lesson Study puts teachers in a position of enthusiasm as a researcher. Doing research help the teachers to know what to do in order to improve their classroom teaching. The development of a new teacher-based Lesson Study involves different stages in classroom education, for example, writing a lesson plan together, sharing class observations, and reflecting on the results as research.

Lewis (2002) noted that the Lesson Study is the main form of teacher professional development. In the Lesson Study cycle, teachers engage in goal setting and student learning development, design lesson plans that support learning goals, and observe and discuss selected research classes. Isoda and Katagiri (2012) also stated that Lesson Study with classroom teaching is a system of planning and forwarding instruction that is designed to challenge teachers to create new teaching approaches, be aware of the possibility of intellectual growth and responsibility of the learners, along with promoting self-confidence. It consists of the following sequence: first, planning is to prepare the lesson rather than do the lesson (predictive possible learning). Second, the order of action (to do) is to provide lessons to students, and at the same time, be observed by other teachers. Third is to reflect on the learning outcomes through a joint discussion. In addition, teachers work together in planning and analyzing their teaching, and create a system for teachers to learn from each other experiences (Stigler and Hiebert, 1999).

In addition, Lesson study is a guideline for professional development on the basis of collaboration which originated from Japan (Fernandez and Yoshida, 2004; Stigler and Hiebert 1999; Murata, 2011). It has one important feature, a research lesson (Murata, 2011; Lewis, 2002; Lewis, Perry, and Friedkin, 2009; Fernandez and Yoshida, 2004). The teacher shared the observation experience with each other and provided opportunities for teachers to be researchers (Murata, 2011). Another important feature is a reflection process on their teaching practices and reflecting on student learning. Moreover, teachers who have acquired knowledge of how to practice reflection shared it among people or a broad community (Murata, 2011).

As mentioned above, the concept of Lesson Study can conclude that Lesson Study is professional development system carry on as research process based on team of the teachers collaboratively set goal to develop their classroom. (Stigler and Hiebert, 1999; Lewis, 2002; Fernandez and Yoshida, 2004; Lewis, Perry& Murata, (2006); Lewis, Perry and Friedkin, 2009; Murata, 2011; Isoda and Katagiri, 2012).

Assistant Professor Dr.Maitree Inprasitha, a director of the Center for Research in Mathematics Education, Faculty of Education KhonKaen University, the first person who brought Lesson Study to Thailand in 2002. He was a Japanese government scholarship student who graduated from Tsukuba University. He adopted the principles of Lesson Study with teaching approach called Open Approach. These two innovations were first published for teachers and supervisors, including 15 secondary education students in science-mathematics major. Together they created a Lesson Plan in an Open Approach Style and applied it in the undergraduate curriculum in the four-year undergraduate program in secondary education, Faculty of Education, KhonKaen University, by conducting one semester experiment in the year 2002 using English textbooks as the main guide in teaching Mathematics. The year 2003 was the founding year of the Center for Research in Mathematics Education (CRME), Faculty of Education, KhonKaen University, to implement teacher development projects using innovative Lesson Study and Open Approach in the form of various activities in conjunction with both domestic and international educational institutions. The Research Project on Development of Prototype Schools for the Reform of Learning Process, in collaboration with many educational agencies and KhonKaen University in the Northeast (2006 to present) was performed by the CRME, KhonKaen University (MaitreeInprasitha, 2003, 2005, 2006, 2011, 2014).

In this research, the researcher is interested in studying self-development of a teacher participating in the program of Lesson Study and Open Approach and the process of her self-development to become a teacher as researcher.

Case Study and Research Context:

The Subject is a 61 years-old woman who has a teaching career for more than 30 years. She taught Mathematics and Thai language in Grade 1 and worked at one of the schools in Sumsoong District, Konkaen Province. In addition, she was mentor of student internship from KhonKaen University, Mathematics Education, who taught in mathematics of grade 1.

She graduated with a bachelor's degree on education in teaching Thai language. The case was purposive sampling for this research because her practices performed completely riches data according to Yin (2014). Her teaching practices done by Lesson Study and Open Approach activities since 2006 to present.She had a good cooperationwith CRME and this research, always joint in open class, workshop, every level of conferences, and had open minded for comment about her teaching. The participants discovered the principles and practice guidelines of teaching methods in an Open Approach, she then adapted and attempted to use the principles recommended by experts to the students in her classes. By implementing these new teaching approaches, the participant found that the students are more confident to express their opinions. Consequently, the participants gradually turned her attention to the operation of both innovations even more.

This school is headed in "The development of professional mathematics teachers with Lesson Study and Open Approach innovation" under the supervision of the CRME, KhonKaen University (2006-present). In this school, the administrators and teachers are happy to participate in the project. They possess the characteristics of a whole school approach. This school is a small size Educational Opportunity Expansion School, from kindergarten to secondary grade 3, with an average of 200 students and 16 teachers a year. The school is classified as a small school in the rural area of Khonkaen province that is about 40 kilometres from KhonKaen University.

The school had attended the Project Situation Analysis education in 2006-2007 where the school's management system was analyzed in order to find ways to integrate the use of Lesson Study and Open Approach. The problems of the teachers, analyzing the necessary equipment needs, school constraints and finding solutions, including the role and involvement of those involved in the use of the classroom and the Open Approach was performed by the CRME, KhonKaen University. The workshop in 2006 – 2009 was about organizing instructional activities based on Lesson Study and Open Approach during pre-semester sessions to understand and prepare for innovation in the school system including reviews and reinforcement of textbooks by the CRME, KhonKaen University.

The research area has a coordinated pre-semester program in which Lesson Study action is taken: weekly lesson plans are written, class attendance observations, a weekly reflection, open class, summary of boarding school performance, and adjusting the lesson plan.

In order to implement the Lesson Study process, a Lesson Study team was established in each class. The grade 1 Lesson Study team consisted of teachers, internship student and observer teacher. At the beginning of the first five years of operation, a school coordinator was a graduate student in the field of mathematics education, Faculty of Education, KhonKaen University, who joined the Lesson Study team. He had attended the Lesson Study activities and Open Approach activities organized by the CRME, KhonKaen University, led by Assistant Professor Dr.MaitreeInprasitha. The Director of the CRME is an expert on Lesson Study and Open Approach to school members from the beginning.

Research Methodology:

This ethnographic research is a case-based study with the researcher as the studied case in data collection (2010 – 2015). The researcher participated in all the school activities related to Lesson Study and Open Approach using field notes to record the activities. Field notes contained information about the conversations with school personnel, and an in-depth interview with observers, teachers, school director and coordinator. The CRME was a major external agency that supported all school activities regarding innovation, education, classes, and Open Approach including the collection of instructional materials in the classroom. This resulted in research that demonstrates self-development practice to teacher as researcher in the context of Lesson Study and Open Approach.

Within this study, the conceptual framework provided by Inprasitha (2010; 2011) was mainly implemented by the participant. As shown below, he categorized the Open Approach into four steps:

1. Posing problem situation
2. Students self-learning through problem solving
3. Whole class discussion
4. Summary concepts by connecting students' ideas

Lesson Study (Inprasitha, 2006) is a principle of professional teacher development using school-based teachers as agents to improve classroom performance and collaborate with professional organizations for advice. The following steps are involved:

1. Collaborative Plan: members of the study lesson team share the teaching goal, write a lesson plan based on previous teaching experience, further consideration and correction including predictions of students' ideas that may arise, respond to situations, and problems.

2. Collaborative observation of research syllabus (Collaboratively Do): a member of the co-education team designs a research lesson to teach in the classroom. The remaining members observe together and record student concepts as they respond to problematic

situations. Teachers keep track of students' ideas, encourage and guide students to come up with the most diverse ideas without answering the students' questions, and waiting and giving students the opportunity to think to their full potential.

3. Collaboration reflects research results (Collaboratively See): the Lesson Study team will gather to talk about the students' ideas to achieve the purpose of teaching and what should be improved next time.

Theoretical framework:

The theoretical framework presented here is a conceptual framework that deals with research in the context of Lesson Study and Open Approach based on the concept of integration between teaching and research in mathematics classes as shown in Figure 1 below. The model shows the integration of teaching and learning using innovative classroom education with classroom research following three stages: The first stage is called creating a corporative lesson plan or defining a research problem. Within this first stage, teachers and research teams brainstorm together in determining the structure of the activities and how to complete the activities through integrating the researcher theoretical concept and the viewpoint of the teacher's actions. The second stage is teaching observation or data collection. This stage can be perceived as a qualitative data collection process since the teachers participating in the research will have the opportunity to record behaviour and the concept of student problem- solving activities. It is an important approach for the teachers to collect data and find solutions to problems in classroom research. In relation to the last stage, reflecting on teaching together or data analysis, reflecting on teaching is one of the processes of "Lesson Study" that can contribute to encourage teachers to participate in research, have a chance to exchange ideas, reflect on the results of every teaching activity, and get the advice of the researcher. This is an important basis for the integration of learning, teaching and classroom research.

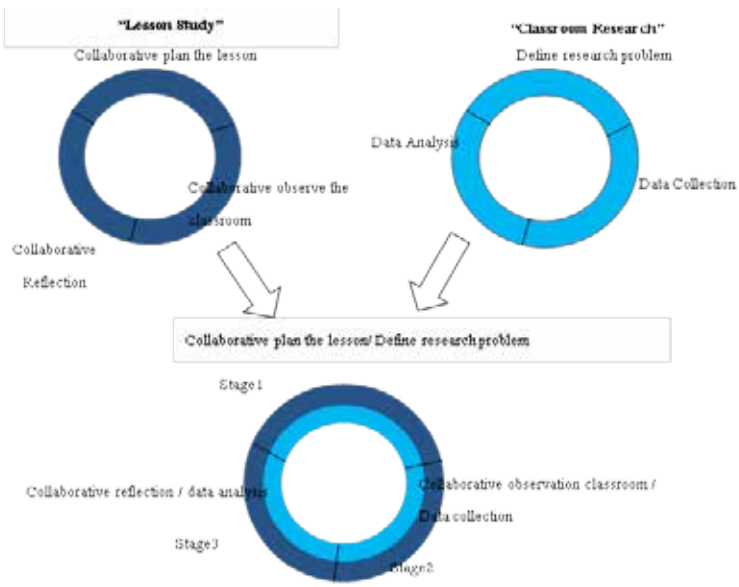

Figure 1.illustrates the conceptual framework for analyzing self-development of teacher as researcher in the context of Lesson Study and Open Approach (Inprasitha, 2010; 2011 and MaitreeInprasitha, 2006).

Research instruments:

The tools utilized in data collection include, as following below

1. History and professional experience of the teacher prior to and after implementation of Lesson Study and Open Approach, example:

Figure2.Honorable Award (OBEC AWARD) at a national level in 2013 First place Award Gold medal for the best teacher in elementary school, mathematics in teaching innovation and technology field

2. Teaching Practice where the participant follows the hierarchy of Lesson Study and Open Approach in 2006-2015

Figure 3. shows weekly teaching activities of the teacher

3. Participation of the teacher and the team from 2006 to 2015 are illustrated by pictures and video showing activity involvement at school level, regional level and national level, example:

Figure 4. Teaching demonstration and reflection of teaching result at a national conference APEC 2008 (year 2551)

Figure 5. Foreign teacher group observed implementation of the Lesson Study and the Open Approach at Kookhampittayasan School

4. Teaching mathematic addition (2) includes 10 periods in 2015, involving learning management plan, interview protocol, classroom lesson photos, classroom lesson videos and teaching records, example:

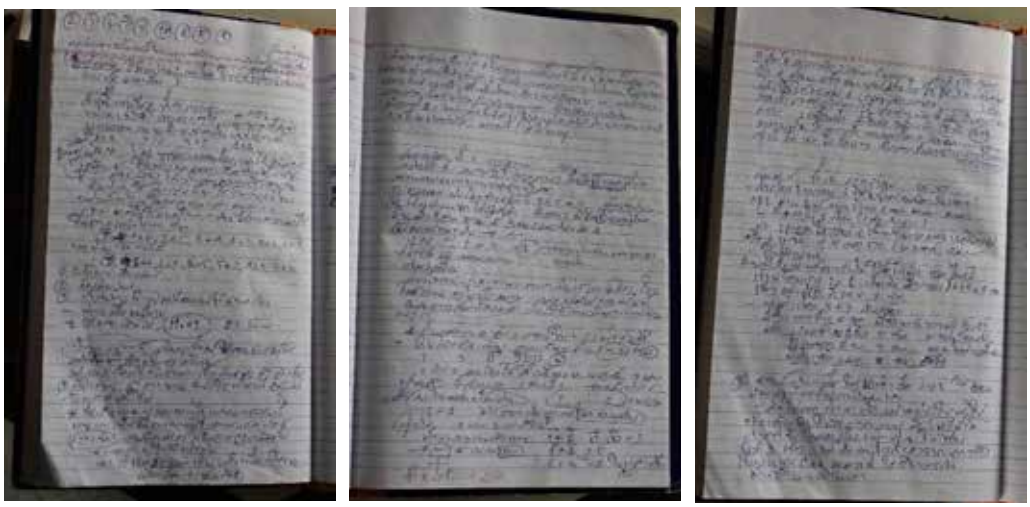

Figure 6.shows examples of teaching journal of the teacher

5. The interview protocol:part of speech of the school director from theinterview protocol “the teacher had high discipline as well as high virtue because she devoted all her efforts for students. There is disappointment and unhappiness when there is a conflict

with self-belief and learning theory. However, the goal is that students must receive some benefits".

Findings and Discussion:

Triangulation analysis of empirical documents and evidence found complete consistency. Thus, self-development to become a teacher as researcher could be analyzed in the context of Lesson Study and Open Approach. The result of the research shows that the teacher developed herself to be a teacher as researcher by integrating these activities on a daily, weekly, yearly basis. The teacher undertook the following actions.

1. In the forming stage of lesson plan, the teacher has recognized the problem, allowing her to plan a better learning management to enhance teaching quality. She define research problems from her own classes by creating and improving the lesson plan with the Lesson Study team. The source of the research problem was to know each student and used the same concept that took place in previous years as basis for consideration. The research problem was formulated in order to observe the difficulties that occurred in the classroom by comparison, from the original taught-content idea in the previous year, and from predicting students' ideas to responding to problematic presentations.

2. In the implementation stage of the Open Approach in classroom, the teacher observed problem-solving skills of students and recorded their thoughts in her notebook. She also systematically collected working and activity documents of her students. The reflective journal had activity logs from the students' presentation which served as data storage and archiving tool. Then these information were used as data for reflection of teaching outcome by the teacher and the team.

3. In the Reflection stage of teaching outcome, the teacher and the team analyzed the events happening in a classroom, students' problem-solving abilities, and the usage of media as well as thoughts of students which could be used for further developments according to the observation. The study shows that data analysis is reliable. The result from the analysis will be used to improve learning management plan and a classroom study in the future.

The implementation of these 3 stages of Lesson Study and 4 steps of Open Approach is repetitive and continuous. It is a routine work. The result of the research could be presented by a diagram in figure 7 showing activities that the teacher performed daily, weekly and annually. These activities help the teacher to become a teacher as researcher.

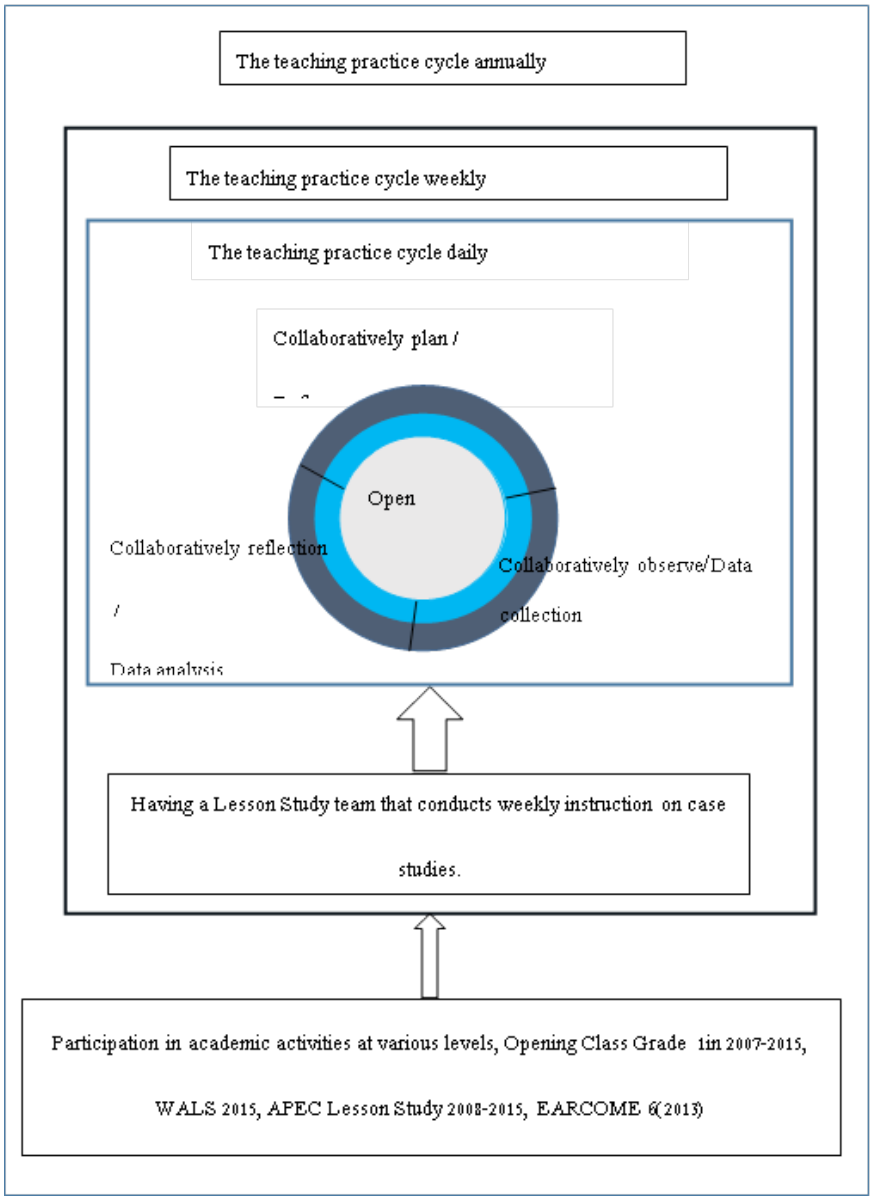

Figure 7. illustrates activities that case study done in daily, weekly and annually that develop herself to be teacher as researcher.

The research obtains the following result as the teacher participated regularly in activities at CRME, for example, the opening class of grade 1 invited specialists from home and foreign country to observe the school project study. She always demonstrates her teaching practice in her own class. Another important justification is that having a good working team, which included experts from the CRME, encouraged the participant to become a teacher as researcher. By implementing these, the participant was able to develop herself to be a teacher as researcher according to many scholars (Lewis, 2002; Lewis, Perry & Murata, (2006); Lewis, Perry, and Friedkin, 2009; Murata, 2011; Isoda and Katagiri, 2012) and in line with

Inprasitha (2006); noted that teacher who integrate Lesson Study and Open Approach in her routine work, she will become a teacher as researcher.

Conclusion:

This research aims to present one aspect of developing teachers to become teacher as researcher by following steps of classroom study and implementing Open approach. As a result, the teacher will completely become a teacher as researcher. The research had objective to analyzes the development of a teacher as researcher in Lesson Study and Open Approach Context. The findings reveal 3 elements of Lesson Study and context of Open Approach that encouraged the teacher to develop herself as a researcher. The elements include: (1) Teaching under the context of Lesson Study and Open Approach that integrate classroom research; (2) Opening Class activities of Grade 1 of CRME, and attending international conferences. The conferences always included open class activity for all, including the studied participant. By attending the conferences, the participant in this study received useful suggestions from experts on how to develop her teaching practice; and (3) having a study lesson team consisting of the classroom teacher-observer. The teacher, together with the participant in this study had been working together since Grade 1. However, it should be noted that the Lesson Study team involving students taught in schools, school coordinator, school director, researchers from the CRME, and graduate students in Mathematics Education changed yearly. These individuals jointly designed a lesson plan, shared class observation, reflection, complete steps of Lesson Study and Open Approach guideline in teaching practice. The result of the development is that the teachers who followed the principles of Lesson Study and Open Approach developed themselves to a teacher as researcher. This was clearly evident in the studied participant for a teacher as researcher.

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Mathematics Teacher Education Program for 21st Century

- **Sudatip Hancherngchai**
- **Maitree Inprasitha**
- **Sampan Thinwiangthong**

Abstract : *The purpose of this study is to analyze the features of intended curriculum for the mathematics teacher education program of the 21st century. This study used the qualitative research methods, case studies and ethnographic study. The data were collected by participant observations, interviews, and documentation. Consequently, the data were analyzed using a qualitative data analysis approach – the component analysis. The results showed that the elements of intended curriculum for the mathematics teacher education program consist of: 1) Knowledge with following sub-categories, 1.1) Pedagogical content knowledge, the school mathematics course, and mathematics learning process, 1.2) Pedagogical knowledge, the teaching profession 1.3) Content knowledge, the collegiate mathematics course,1.4) General knowledge, the general education courses, and 1.5) Practicum knowledge is the teaching practice course; 2) Skills/Processes; 2.1) Observation skill, concept prediction skill and feedback skill; 2.2) Mathematics learning process such as problem solving, communications, presentations, connections, and proofs and reasoning; 3) Desirable characteristics;3.1) Collaboration for planning, practice and feedback according to Lesson Study process;3.2) Open to the opinions and suggestions of others ;3.3) Understand the products-processes oriented approach; 3.4) Public mind concern through work with others.*

Keywords: mathematics teacher education program, 21st century skills, intended curriculum

Introduction

The differences between the labor demand on the 21st century and 20th century are the abilities of a person, citizens' duty, self-awareness and key elements of knowledge. While the proportion of manual or routine workers tends to decrease, the proportion of workers with expert thinking or complex communication are likely to increase (Lavy & Murnane, 2004). The essential skills for the 21st century such as expert thinking, problem solving, reasoning, analytic thinking, creative thinking, meta cognition and the use of a variety of process to solve the problem can help to prepare the students to thinking, learning, working, problem solving, complex communication and cooperation to work effectively for the rest of their life (Inprasitha, 2011; Kay, 2010, Bellanca & Brandt, 2010, Panich, 2012, Wongtrangan, 2015).

Preparing for the 21st century, several countries have been improving the mathematics curriculum by including the problem solving concept in the course of study. Inprasitha (2011, p.1) concluded that Japan has introduced the problem solving concept into the curriculum since 1951, Singapore in 1992, Brunei and Malaysia.Thailand has entered the problem solving ability as one of the students' competencies according to Basic Education Curriculum B.E. 2011 (Inprasitha, 2014; Ministry of Education, 2001). As a result, the teacher education

is required to prepare the teachers to manage the teaching courses regarding those concepts (Inprasitha, 2013, p. 35).

Nevertheless, both reports from Tomorrow's teachers: A Report of the Holmes Group and A Nation: Prepared: Teachers for the 21st Century indicated that the teacher education program did not response to a course of education in the 21st century (Brown & Borko, 1992, p. 209). Many countries are facing the challenges in producing and supporting the quality of teachers to improve mathematics teaching effectively (Hiebert, Morris, Berk & Jansen, 2007; Morris, Hiebert & Spitzer, 2009; Park, 2005). There are many problems of the courses from the Faculty of Education especially in the field of science and mathematics, such as adequately content intensity, discouraged professional teaching practices for professional teacher preparing, lack of instruction on student centered as well as insufficient learning process for teacher in the existing teacher education program (Inprasitha, 2006; Wongtrangan, 2014). In addition, the teacher education program did not focus on the problem solving. For example, most of the teacher education programs in Thailand disregarded the significance of problem solving associated with other mathematical learning processes as expected from the basic education core curriculum B.E. 2011 (Inprasitha, 2014, p. 97).

The teacher preparation can help a student teacher to acquire knowledge and required skills in many contexts to teach mathematics effectively (Ball, Thames & Phelps, 2008; Shulman, 1987).In fact, the viewpoints about teaching the mathematical knowledge and skills have been built in accordance with the learning experience of the students in the course (Cooney, 1994; Stigler & Hiebert, 1999) including the professional teacher, characteristics such as morals, ethics, educational values, or interpersonal skills (Chumjit, 2010;Hessong & Weeks, 1987; Inprasitha, 2011; Ministry of Education, 2011; Scriven, 1994; Taylor, 1994; Türkkahraman, 2014).Therefore, the curriculum design of teacher education program requires a deep insight especially in the specific content and essential content for teaching method (Hill, 2010, p. 514).

However, the traditional teacher education program separated the content knowledge from the pedagogical knowledge, thus mathematics studied at the department of mathematics, Faculty of Science. While pedagogy studied at the department of education, Faculty of Education. (Graham, 2006; Inprasitha, 2011; National Research Council [NRC], 2001). The mathematics education programs are either offered under the Faculty of Science or the Faculty of Education. The planning of the curriculum for mathematics teacher education is based on two schools of thoughts. First, to be a competent mathematics teacher, mathematics teacher education program developed by mathematicians is based on a firm belief that one must have an in-depth knowledge of mathematics and some basics in pedagogy is considered adequate to start off the teaching profession. The skill will come later; it is more of on the job skill acquisition. On the other hand, mathematics teacher program developed by educationist tend to emphasize more on the pedagogy, and is developed based on a strong belief that knowledge of pedagogy and of learners is as equally important to knowledge of mathematical content (Graham, 2000; Yunus, Hamzah & Isamail, 2008). Moreover, the teacher education program is required to design to help the student teachers develop their learning abilities from the teaching experience, prepare their opportunities to connect the theory with the practice experience in the classroom and learning from the reflection of the experience (Darling-Hammond & Hammerness, 2005; Darling-Hammond, 2006). As a result, we are interested to study and research the features

of mathematics teacher education program which might be useful for the basic research associated with the development of teacher education program in the future.

Literature Review

The researcher has reviewed the topics relating to the study as follows:

Mathematics Teacher Education Program

Cooney (1994, p. 16) concluded that the mathematics teacher education program should have the following factors in order to encourage efficiency in teaching:

1) Encourage the development of mathematical knowledge through teaching with the constructivist perspective;

2) Provide the opportunity for student teachers to reflect on their own experiences as mathematics learners;

3) Provide the context for students to develop their expertise in identifying and analyzing constraints during class and how to deal with those limitations;

4) Provide the context for student teachers to gain experience in the assessment of mathematics understanding for students;

5) Provide the opportunity for student teachers to transfer the knowledge about mathematics regarding the strategies that can improve teaching development.

Borko et. al (1992, p.194)reported that the mathematics teacher education program should creating students' opportunities to learn subject matter knowledge for develop the conceptual thinking and language, and to connect between representation and application procedures and processes to the other parts.

Bufarsan (2000, p. 23) indicated five main elements of teacher education program responding to the target and standard of the course:

1) Knowledge: A rich knowledge content, pedagogy, and technology should be included in the curriculum to prepare future teachers;

2) Instruction: Instructional plans using technology and a variety resources should be included in the teacher education program;

3) Student diversity: the program should include instructions that meet student cultures and populations, learning styles, and background experiences;

4) Professional development: the program should include opportunities to practice professional development;

5) Field experience: field experience is needed to learn and practice teaching skills.

The first three components are separated into three parts: knowledge and skills, attitudes and real life in school.

Darling-Hammond, Hammerness, Grossman, Rust & Shulman (2005, pp.394-395) proposed the features of teacher education program as follows:

1) The contents of teacher education are the content and connected methods of teaching, including the scope that can help to plan the knowledge of teaching in order to see the relationship between the content and pedagogy linked with practical theory that support the students learning;

2) The learning process is a scope for the available curriculum and a tool for many practices to accept the understanding of teacher expression in class;

3) The learning context is the scope of teacher learning in the context to develop the practical expertise as the context that covers the entire scope of content and community of practice by sharing the practice management and development based on the knowledge.

Inprasitha (2013, p. 37) mentioned that the key features of the curriculum as: 1) knowledge 2) processes/ skills and 3) desirable characteristics.

From aforementioned, it can be summarized that the expected level of mathematics teacher education program includes: knowledge, skills/processes, and desirable characteristics in which these features are important in the creation and development of the future teacher.

Teachers' knowledge for 21st Century

In the design of teacher education program, appointing curriculum developers must specify the type and level of knowledge required for the preparation of quality mathematics teachers (Yunus, Hamzah & Ismail, 2008, p. 125).The elements of the teachers' knowledge have been identified by diverse scholars that teachers cannot teach what they do not know. Therefore, the teacher must have a deep knowledge, not just only the specific mathematics they teach, but also the mathematics that their students are to learn in the future (Fennema & Franke, 1992, p. 147).

Shulman (1986, pp.9-10) identified the elements of knowledge which is the foundation of the teaching consisted of: content knowledge, general teaching knowledge, pedagogical content knowledge, curriculum knowledge, student characteristic knowledge, practical classes knowledge and educational value knowledge. The most influential of the elements of knowledge is the new concept of Pedagogical Content Knowledge. PCK is that special amalgam of content and pedagogy is uniquely the province of teachers, their own special form of professional understanding […] It goes beyond knowledge of subject matter per se to the dimension of subject matter for teaching. (p.9).

Ball, Themes & Phelps (2008, p. 401) presented the model of knowledge for mathematics teaching as: the general and specific content knowledge and pedagogical content knowledge including content knowledge for students and teaching.

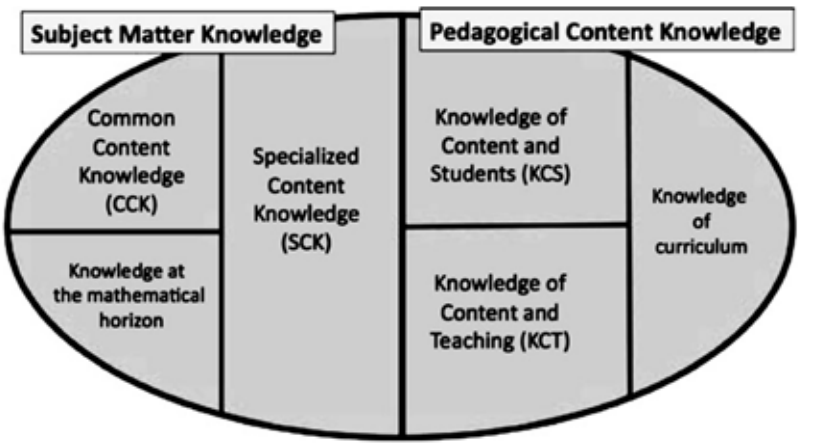

Figure 1. Mathematical knowledge for teaching (Ball et al., 2008)

Skills/Processes for Teachers in 21st Century

Hiebert et al. (2007, pp. 50-58) proposed four important skills in practice of teachers' classrooms:

1) An identification of learning to target is the first skill since ambiguous target results in neglect of learning, the method of learning which connected to the class management and the improvement of teaching method to stimulate effective learning of student in the next lesson;

2) Teaching empirical observation is the evidence gathering skill to fulfill each student target, including; (1) the value of evidence that demonstrates the essential learning of student to evaluate the effectiveness of the instructions; (2) Be aware of the student learning achievement evidences classified by the consistent and inconsistent response of students from them; and (3) Understand how to collect the evidences by identifying the key moments in a lesson that shows the clear evidences of student learning and plan how to collect the evidences from each student by concluding the implementation of useful empirical observations to know what and how;

3) Hypothesis formation of teaching effectiveness is a hypothesis development to link teaching and learning skills by building the forecast methods, such as the questions, activities, and so onto facilitate or inhibit the student learning;

4) Target analysis to improve the teaching is the skills to prepare the information needed to make teaching method decisions based on the evidence gathered. This target aims to clarify the learning goals that include information about whether the students will achieve their goals and create assumptions about teaching methods that facilitate the student learning. The revisions to improve the teaching and learning are from instructions contained in the hypothesis.

Desirable Characteristics of Pre-service Teacher for 21st Century

The development of skills and characteristics of pre-service teachers should be appended in the curriculum rather than as a supplementary course. Banta & Kuh (1998, p.42) stated that the necessary method to improve the quality of the experience of undergraduate students is to joint between inside and outside classroom experience as a part connected between the academic and student development through the value for the student teachers. For example, the values for student teachers in Singapore consist of three items as: student-focused values, values on teacher characteristics and values on professional service and community. Inprasitha (2010, p. 71) presented the core values of student teachers as follows:

1) Building collaboration: emphasis on the community members aware of an identity of each other and provide the value to the members because everyone is important;

2) Public concerns: emphasis on community members to aware of public concerns by realizing the other people in the society rather than ourselves based on the good wills and good intentions;

3) Open-minded attitudes: emphasis on the community members by willing to hear or consider the new ideas either they are criticism or suggestions from community members;

4) Product-Process-oriented Approach: focus on the students to value the work both in the process and the results.

Research methodology

This study used the qualitative research methods such as documentary research, and ethnographic study for the investigation by combining educational context together with

the data gathered by the researchers involved (Freebody, 2003, p. 1). I am studying at mathematics education program of Faculty of Education of Khon Kaen University since 2006. I was teacher assistance in undergraduate student classes from 2006 to 2011 and have participated in every extra activity. I observed how to teach undergraduate classrooms such as problem solving in school mathematics, communication in school mathematics, and so on. In addition to, I observed internship students' classroom and worked with the lecturers every activity.

Data collection

This research collected the data as follows:

1. The author compiled the documents to be used for the data analysis, including mathematics teacher education program for undergraduate students of Faculty of Education, Khon Kaen University and course outline.

2. The author collected the data using in-depth interviews with key informants, including chairman of the curriculum committee, lecturer in mathematics education, mathematics teacher and undergraduate students in the year of 2-5.

Data analysis

The researcher analyzed the documents and information from the target group interview using the component analysis approach to investigate the features of the mathematics teacher education program. Component analysis is good for analyzing the characteristics of the components of each set of the data. The data can be compared and contrasted to make conclusion. (Lincharean, 2012). Consequently, the author discussed each feature with the reference from Ballet (2008), discussing the teachers' knowledge with reference to Hiebert (2007), discussing the teachers' skills and processes and desirable characteristics with the reference to Inprasitha' concepts (2011), finally, the analyzed data were compiled and summarized.

Study results

The author collected the data from the interviews and documents, and then analyzed research data related to the key elements of intended curriculum of the mathematics teacher. The results showed that the mathematics teacher education program of the Faculty of Education, Khon Kaen University consists of the following main components:

1) Knowledge features

The knowledge elements of mathematics teacher education program for undergraduate students of the Faculty of Education, Khon Kaen University include the following courses:

Table1. The percentage of subjects in the mathematics teacher education program of the Faculty of Education, Khon Kaen University in 2013

Course	Credits	Percentage
Collegiate mathematics	36	21
School mathematics	24	14
Mathematics learning process	21	12

Course	Credits	Percentage
Teaching profession	42	25
Practicum	12	7
General education	36	21
Total	171	100

In addition, the support evidences were gathered from the interview with the chairman of the curriculum committee and curriculum designer.

"...Originally, a major subject was split into three parts: first part at the Faculty of Science 36 units, studying the calculus 1-2 referenced from the diploma program with just 30 units of major subject which is in use now; the other part with 48 units were split in 24 and 24 units because we focus on the problem solving with require process subject such as problem solving, communication; the last part is school mathematics which is not only a generally teaching but also a pedagogy embedded with the content, which is called PCK so in this case called Math PCK"

(The curriculum committee, 8 July2014)

The above evidence revealed that the design of the course in the feature of knowledge consists of the subjects as follows: the content knowledge such as collegiate mathematics courses; the pedagogical content knowledge such as the courses for mathematical learning processes and school mathematics; teaching knowledge such as profession teaching courses and practicum; and general knowledge such as general educational courses.

2) Skills/processes features

The author analyzed the detail of skills/processes using the concept from Hiebert et al. (2007). The analysis from the interview of a chairman of the curriculum committee showed that the necessary skills for the student teachers of the 21st century include:

"... Originally, the students sit and listen to the teachers, so conveying is the performance of common teachers. Poor expression may result in misunderstanding of students. However, if we told the students to solve a problem, they can think when a problem is solved by themselves. The teachers must observe; thus the other important skill is the observation skill…The other associated with the observation is the student anticipation. What the teacher must really observe, they must observe the students' ideas, and teachers can to anticipate students' ideas and difficulties…The students' observation can show that their concepts are not with our anticipation from the refection. The refection skill is important for the teacher, which I think as a circle ... I think the important skill competencies are the anticipation skill, observation skill and reflection skill" (The curriculum committee, 8 July2014)

Additionally, the course outlines of problem solving processes in school mathematics and communication processes in school mathematics indicate the teaching guideline focusing on these three skills for students as follows:

- Problem solving collaboration and observation from the problem situations;
- Analysis and discussion about the experience of problem solving to synthesize the problem solving process or solution;
- Anticipation students' ideas from open-end problem solving. (course outlines of problem solving processes in school mathematics, 2013)

From the evidence above, it can be concluded that the mathematics teacher education program of Faculty of Education, Khon Kaen University indicates the guideline to provide the observation skill, student anticipation skill and reflection skill for students. On the part of process, the course curriculum is designed from the concept of National Council of Teacher of Mathematics [NCTM] with the subjects related to the mathematics learning process as the information from the interview.

> *"...The major subject for this course is the learning process by the concept of NCTM. All the process of mathematics learning is new so it is implemented as a course for undergraduate level. Thus, the process subject includes the problem solving, proof and reasoning, and communication representation connection..."*

(curriculum co-designer, 25 October2015)

The above information shows that the process of the mathematics teacher education program of the Faculty of Education, Khon Kaen University consists of the mathematics learning process subjects. As a result, the students are trained on the learning process from these subjects.

3) Desirable characteristics features

The mathematics teacher education program of the Faculty of Education, Khon Kaen University includes the activities to develop the desirable characteristics of the students from the interview of the chairman of the curriculum committee and teachers regarding desirable characteristics development.

> *"...I built up a small community such social activity so everyone in the community must work, for example, the children day for the 1st year, math camp for 2nd year and field trip for 3rd year. The team can bring 200 people to any province that they would like, so they need a very hard management by contacting lots of things. For 4th year, they attend the conference and initiate more academic activities such as class observing in Japan or ASEAN or observer the class with Japanese lecturer. Then 5th year, they work with teacher in the school system for 1 year."*

(The curriculum committee, 8 July2015)

The information from the interview shows that the activities for student development such as children day event, sport day, math camp for youth, mathematics seminar, attending the national and international conferences, observation the class under the research project and teaching practice in school aim to build the social activity for students.

Moreover, there is information of an interview from the chairman of the curriculum committee about the desirable characteristics for the students.

> *"...To manage the course here, we call it the core values which we are trying to make it happen. The first is to work together in unity… the second, I focus on the open-minded to accept the differences and understand the others … the third we emphasis on the public mind … and finally the value is focus on the process and outcome or outcome and process …"*

(The curriculum committee, 8 July2014)

From the interview with a chairman of the curriculum committee, it can be concluded that the desirable characteristics of the students are: the value of collaboration and unity at work; the value of open-minded to accept the differences in the thought and identity of other people; the value of public mind to work with a good deed; and the value that focus on the process and outcome to understand the work procedure and see through all components in the process to make a good plan with less mistakes. Theses 4 values are the main approach to develop the desirable characteristics to the students.

From each activity, the participated students have learnt as follows:

> *"For the process of work on the activities of the branch, first we need to set a meeting between the conference organizers and host … to divide the roles and responsibilities so the meetings are held between other students on different year during the preparation… after the event, the feedback from the activity is responded to learn good things and things that need to improve …"*
>
> (Undergraduate student3, 12 July2015)

> *"...I learn the systematic work with plan and expected problem and obstacle to find the solution when the problem actually occurs…"*
>
> (Undergraduate student 6, 8 December 2015)

From the data of the interviews and document analysis about the desirable characteristics of the students, the curriculum is suggested that the students each year is responsible for the activity. The students divide roles and responsibilities and set up the meeting to forecast the difficulties and obstacles that might occur from the activities and get the feedback from the students after the event.Additionally, we found the integration of lesson study with the work process to develop the desirable characteristics for the students.

Conclusion and Discussions

The study results show that the curriculum consists of three key features including knowledge, skills and processes and desirable characteristics.

Knowledge

The mathematics teacher education program of the Faculty of Education, Khon Kaen University consists of: 1) Pedagogical content knowledge including school mathematics and mathematics learning process; 2) Pedagogical knowledge including teaching profession; 3) Content knowledge including collegiate mathematics; 4) General knowledge including general education and, 5) Practicum knowledge including teaching practice in school 1-2.

Skills/Processes

The mathematics teacher education program of the Faculty of Education, Khon Kaen University prepares the skills/processes for the students as follows: 1) the curriculum focuses on 3 skills for students: observation skill, anticipation skill and reflection skill, and 2) the curriculum focuses on the mathematical learning processes such as problem solving process, communications process, connection process, proofs and reasoning process, and representations process.

Desirable characteristics

The mathematics teacher education program of the Faculty of Education, Khon Kaen University focus on 1) core values through collaboration by planning, doing and reflecting; 2) the student teachers listen to other people opinions from class and other student development activities; 3) Guide the student teachers to understand the thinking process and outcome and 4) Public mind concerns when they worked together.

As a result, the curriculum should contain the subject of content knowledge, teaching knowledge, general knowledge, practical knowledge and pedagogical content knowledge. According to Park (2005) who analyzed the curriculum of countries group with the top PISA score such as Hong Kong, Taiwan and Korea, he found that the curriculums of those countries contain the subject of pedagogical content knowledge which is a significant knowledge for the teachers. For the skills/process, observation skill, student concept prediction skill and feedback are the main focus. The processes are emphasized on the mathematics learning process of students to manage the class to associate with student learning. Hiebert et al. (2007) stated that the key teachers' competencies including the skills to set the objective of lessons, observe the student concept and get the reflection to improve their teaching. The desirable characteristics of the students are focused on the core values by the process of Lesson Study.

Therefore, teacher educators should recognize to design mathematics teacher education program especially the features of the program. In addition to, implementing the program should carefully design. In the future I will be study of the how to implement the mathematics teacher education program of the Faculty of Education, Khon Kaen University which focus on the four of core values.

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Comparison of the Effects of Implicit and Explicit Phonics Instruction on English Achievement in Reading and Writing (Spelling) of Primary Students

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- **Arnon Chaisuriya**

Abstract: *The purposes of this study were to compare the English achievement of the students by using two different teaching approaches between implicit and explicit phonics instruction in Grade 1 and Grade 2, and to compare the students' achievement in reading (read aloud), and writing (spelling) by using implicit and explicit phonics instruction. The study used a quasi-experimental design with experimental and control groups. The sample, derived by means of the Krejcie and Morganc (1970) technique and purposive sampling method, consisted of 169 Grade 1and Grade 2 students (Grade 1 = 85, Grade 2 = 84), studying at Piboonbumpen Demonstration School at Burapha University in the second semester of academic year 2015. The sample was divided into the experimental and control groups (Experimental group = 169; Control group = 131). The experimental group was taught by using explicit phonics instruction while the control group used the implicit teaching approach. The instruments used were a lesson plan and materials for explicit phonics instruction, the Grade 1 and Grade 2 students' English Achievement Test, the reading (read aloud), and the writing (spelling) tests. Mean, standard deviation, percentage, and t-test were the students' achievement in reading statistical devices employed for the data analysis.*

The findings indicated that the students both in Grade 1 and Grade 2 learning through explicit phonics instructions had significantly higher English achievement than those learning through implicit phonics instruction at the .05 level. In addition, the achievement of both reading and writing skills of the students learning by using explicit phonics instruction was also found significantly higher than those taught through implicit phonics instruction in both Grade 1 and Grade 2 at the .05 level.

Keywords: English achievement, Quasi-experimental**,** Implicit phonics instruction, Explicit phonics instruction

Background of the study

English is a global language because it is so widely spoken. It has often been referred to as a world language, even in countries where it is not the official language (Langer, 2002). It is the most commonly taught second language. There are many reasons for studying English as a second language in Thailand: to get a good job after graduation, to study abroad, to communicate with foreigners, and to get more information from English newspapers,

magazines, books, and websites. Learning English is becoming more and more important for Thai students, especially young learners.

Phonics instruction is a way of teaching reading that focuses on letter-sound relationships (LDA of Minnesota, 2004). During phonics instruction, children are taught letter-sound correspondences and how to use them to spell and read words. When learners have good decoding skills, they read more fluently and comprehend more of what they read. Phonics instruction works because it teaches readers the predictable patterns of sounds and symbols produced in the English language.

As classified by Ehri (2002), phonics is a method of instruction that teaches students the correspondence between graphemes in written language and phonemes in spoken language, and how to use these correspondences to read and spell words. The notes that phonics instruction is systematic when the major grapheme-phoneme correspondences are taught and they are covered in a clearly defined sequence. Systematic phonics instruction in kindergarten and first grade results in better growth in comprehension. The ability to read the words in a text accurately and automatically is highly related to successful reading comprehension. Children from various backgrounds make greater gains in reading when they have received systematic and explicit phonics instruction in kindergarten and first grade (Shelbyed, 2012). An essential component of effective phonics lessons is that teachers provide direct and explicit instruction on each skill presented (Carnine et al., 2004). In explicit instruction, teachers clearly identify the objective of the lesson and briefly explain why learning the targeted skill is important.

Numerous studies (Devonshire et al. 2013; Duncan et al., 2013; LDA of Minnesota, 2004) have shown that phonological awareness teaching programs that include letter-name and letter-sound correspondence have a greater positive impact on reading development than interventions involving phonological awareness or sound-letter instruction alone. Training in phonemic awareness and phonics may lead to higher scores on tests of phonemic awareness and phonics knowledge, but such instruction will not improve struggling readers' ability to read (Ivey & Baker, 2004).

National Reading Panel (2000) indicated that in an explicit (synthetic) program, students would learn the associations between the letters and their sounds. This may comprise showing students the graphemes and teaching them the sounds that correspond to them.

Statement of the problem

The researcher focused on the discrepancies of phonics instruction and methods within these instructional practices that influence the development of primary students' literacy skills. Focus has been drawn to the development of invented spellings, glottographic theory, and comprehension because in recent decades controversy has arisen about the best way to teach students these literacy skills. Phonics instruction will determine which type of phonics instruction is more effective in supporting primary students' acquisition of literacy skills.

Purposes of the study

The purposes of this study were to compare the English achievement of the students by using two different teaching approaches of implicit and explicit phonics instruction in Grade 1 and Grade 2 and to compare the students' achievement in reading (read aloud), and writing (spelling) by using implicit, explicit and phonics instruction.

Research questions

1. How does the students' English achievement differ between implicit and explicit phonics instruction approach in Grade 1?

2. How does the students' English achievement differ between implicit and explicit phonics instruction approach in Grade 2?

3. Does the explicit phonics instruction approach improve students' reading (read aloud) skills in Grade 1?

4. Does the explicit phonics instruction approach improve students' reading (read aloud) skills in Grade 2?

5. Does the explicit phonics instruction approach improve students' writing (spelling) skills in Grade 1?

6. Does the explicit phonics instruction approach improve students' writing (spelling) skills in Grade 2?

Significance of the study

1. Teachers will understand and appreciate the use of explicit phonics instruction teaching with Grade 1and Grade 2 students to read and write (spelling) English.

- Teachers and Grade 1 and Grade 2 students will receive an empirical result by using explicit phonics instruction in learning to read and write (spelling) and understand what they have read in English.

- Grade 1 and Grade 2 students will be able to develop and improve their reading and writing (spelling) abilities of reading comprehension when they study at the next level.

Research design

The quasi-experimental approach introduces considerably more threats to internal validity than the true experiment. Because the investigator did not randomly assign participants to groups, there were no potential threats of maturation, selection, mortality, and the interaction of selection with others. Individuals assigned to the two groups may have selection factors that go uncontrolled in the experiment. Because we compared two groups, the treatment threats may also be present. In addition, when the pre-test/post-test design was used, additional threats of history, testing, instrumentation, and regression also may occur. While the quasi-experimental design has the advantage of utilizing existing groups in educational settings, it introduces many threats.

Population and samples

The study population consisted of 300 Grade 1 and Grade 2 students who were studying at Piboonbumpen Demonstration School in the second semester of the academic year 2015 at Burapha University, Chonburi Thailand.

Based on Krejcie and Morgan (1970), the sample size of this study was calculated to be one hundred and sixty-nine students. The purposive method was used for selecting the participants in this study. The sample number of a population of three hundred is one hundred and sixty-nine Grade 1 and Grade 2 of students studying in the second semester of the academic year 2015.

The researcher determined to use purposive sampling method for selecting the participants in this study with the number based on the criteria set regarding one class in each level.

Research instruments

In this study, in the first stage the lesson plans to teach English phonics instruction in Grade 1and Grade 2 were used for collecting data from the participants. The subject content and the lesson plans were designed to get the highest results that develop the students' ability in sounding out words and writing learning ability according to the principles and practices validated by scientifically based reading research, as defined by the National Reading Panel (Armbruster, Leher, & Osborn, 2001).

The research instruments focused on the intervention of phonemic awareness and phonics instruction. According to the analysis by the National Reading Panel (NRP), studies that spend between 5 to 18 hours of teaching phonics awareness yielded very large effects on the acquisition of phonemic awareness (National Institute of Child Health and Human Development, 2001).

The second stage, the pre-test/post-test and the English Achievement Test, was set by the specifications of subject content and checked by experts. The English Achievement Test came from administrative to design the test. Therefore, the research instruments in this study was structured and outlined.

Data collection

1. The researcher taught phonics instruction and using one method as explicit by following the lesson plans.

2. The results of the students' final exam were analyzed to compare the scores in the implicit and explicit methods of Grade 1 and Grade 2.

Data analysis and findings

1. Analysis of efficiency of the lesson plans by using E1/E2.

2. The average scores of the Mean, and Standard Deviation, and Percentage were compared between the two methods (implicit and explicit phonics instruction).

Conclusions, discussion and recommendations

Conclusions

1. The achievement of Grade 1and Grade 2 students after learning through explicit phonics instruction program was found significantly different than that of before learning at the .05 level.

2. The comparison of the English Achievement Tests of Grade 1 and Grade 2 students showed that the overall achievement of the students studying by using explicit phonics instruction was significantly higher at the .05 level than the students studying by using implicit phonics instruction. It can be concluded that explicit phonics instruction is beneficial to learning English of Grade 1and Grade 2 students.

3. Regarding the comparison of the achievement in the Reading Part (Read aloud) of Grade 1 and Grade 2 students, the achievement in the Reading Part (Read aloud) of the students studying by using explicit phonics instruction was significant at the .05 level. It can be concluded that explicit phonics instruction can help students read and pronounce the words correctly.

4. With reference to the comparison of the achievement in the Writing Part (Spelling) of Grade 1 and Grade 2 students, the achievement in the Writing Part (Spelling) of the students studying by using explicit phonics instruction was significant at the .05 level, which was

higher than the students studying by using implicit phonics instruction. It can be summarized that the explicit phonics instruction plays an important role in students' writing ability. They can write using the alphabet and correct spelling.

Discussion

1. According to past researches, the findings revealed that the implicit phonics was analytical phonics, moves from the whole to the smallest part. Phonemes associated with particular graphemes were not pronounced in isolation. Students analyzed words and look for the common phoneme in a set of words. Through comparison and identification, they deduced which grapheme to write or which phoneme to read. Blending and building were not usually taught, and students identify new words by their shape, beginning and ending letters, and context clues. It was in congruence with Stanovich's studies confirming that children should be explicitly taught phonemic awareness-not merely to help them sound out words, but recognize words on sight automatically (Stanovich, 1991; 1992).

In conclusion, the results showed that the Experimental group is English achievement test was improved by using explicit phonics instruction both in Grade 1 and Grade 2. It was conclusive that explicit phonics instruction was the most effective. Empowering students with these decoding strategies helped ensure reading success and gave them a solid foundation for their academic future.

2. Explicit phonics instruction might exhibit the very best instructional features. However, if it was not carried out by ability knowledge teacher, their likelihood of success is diminished. Teachers must understand how to implement a phonics instruction effectively, how to plan lessons and make sure they are carried out. They must understand what students should know and be able to do better as a result of their teaching of the National Reading Panel (2000). Swanson (1998) observed significantly larger effect sizes on reading outcomes when direct skills instruction was combined with comprehension strategy instruction than when each was administered separately to students. The ever-growing need for good communication skills in English has created a huge demand for English teaching around the world as well as through the media and the Internet. The worldwide demand for English has created an enormous demand for quality language teaching and language teaching materials and resources. Learners want to be able to master English to a high level of accuracy and fluency. Fluency in English is a prerequisite for success and advancement in many fields of employment. Communicative Language Teaching or CLT was first proposed in the 1970s, and how it has influenced approaches to language teaching. Since its inception in the 1970s, CLT has serves as a major source of influence on language teaching (Richards, 2006).

In conclusion, the results show that the Experiment group was improved with with reading (read aloud) by using explicit phonics instruction both of Grade 1 and Grade 2 that most types of phonics instruction can be beneficial for students.

3. Richards (2008) suggests that speaking skills in English is priority for many second-language or foreign-language learners. Oral skills have hardly been neglected in EFL/ESL courses though how best to approach the teaching of oral skills has long been the focus of methodological debate. Teacher and textbooks make use of a variety of approaches, ranging from direct approaches focusing on specific features of oral interaction to indirect approaches that create conditions for oral interaction through group work, task work, and other strategies.

Finally, the results showed that the Experimental group was improved with with writing (spelling) by using explicit phonics instruction both of Grade 1 and Grade 2 that most types

of phonics instruction can be beneficial for students. Its indicated that the Experimental group was improved with reading (read aloud) and writing (spelling) skill both of Grade 1 and Grade 2.

Recommendations

The findings of the present study show that the reading (sounding out) and writing (known and unknown words) achievement of the participants has increased after having the treatment. This shows that explicit phonics instruction helped the students with reading (sounding out) ability and also spelling and writing (short vowel sound, long vowel sound, blended sound, and alphabet sound). Ivey and Baker (2004) stated that phonics teaches developing readers the relationship between phonemes (sounds of oral language) and graphemes (letters that represent sounds in print). Students who learn phonics master the sound/symbol code that enables them to read and spell. Therefore, explicit phonics instruction should be introduced in English classes for beginning young learners to make a strong contribution to develop students' reading and writing ability in the later stages.

Sriprasidh (2010) said systematic or explicit phonics instruction is effective for children from various societies and economic levels. The systematically designed instruction program can be an important tool to directly develop the phonological processing necessary for proficient reading. In consequence, the systematic phonics based on instructional program helps teaching children to convert print to sound and learn specific skills as well as developing the children's neural pathway. Explicit phonics instruction can also be an effective way to help learners understand the sound structures in English and even further improve their reading proficiency. Children should be taught to use this knowledge to form a solid background and improvement of their vocabulary learning ability for reading and writing.

Further studies on the English phonics instruction could be conducted to compare different approaches of phonics instruction and levels. The researcher recommends using different methods such as two groups designed of the pre-test/post-test of the Experimental group and the pre-test/post-test of the Control group.

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A Thai Study of Mathematical Creativity of Students in the Lesson Study and an Open Approach Context

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Abstract: *The purpose of the study was to investigate Thai students' creative thinking in the lesson study and the open approach context by the participant observation and assessment of the students' mathematical creativity. The target group was 7th grade students who had been taught continuously for six years through the lesson study and the open approach. It was the class where the teacher had experience in teaching through the lesson study and the open approach regarding the concept of Inprasitha (2011a). In addition, this school has been the model school to apply the innovation under the project of the teacher professional development with the lesson study and the open approach for over 10 years since 2006, organized by the Center for Research in Mathematics Education (CRME), Faculty of Education, Khon Kaen University. The results of the study revealed that all of the students taught in the lesson study and the open approach context had creative thinking consisting of divergence, fluency, flexibility, and originality. Moreover, the results of the study were beneficial for the Mathematics teachers to apply the instructional guidelines to their own teaching in order to encourage the students' creative thinking.*

Keywords: Creative thinking, Lesson study, Open approach

Introduction

Creative thinking is considered one of the human abilities that is more qualitative than other abilities, and that the crucial factor for supporting the progress of the country (Panmanee, 1998). Thus, developing the potential in creative thinking will help develop human intelligence, and one will be clever, able to solve problem quickly, and develop new things more remarkably as compared to others. In addition, it can help people to live happily and benefit the society abundantly (Charoenwongsuk, 2006). The Ministry of Education (2008) has prescribed the policy on developing juveniles in the country for the 21st century, which mainly encourages the learners to have creative thinking skills. However, as the results of the previous educational management have shown, it was found that the norm of the students' creative thinking was typically low (Office of the Permanent Secretary Ministry of Education, 2012). Although Thailand places importance on developing the teaching profession in order to develop the quality of instructional management as well as the learners, it cannot improve the Thai education substantially (Siamwasana et al., 2012). The innovation of the lesson study is one of the approaches that Japanese teachers have been applying to the teaching professional development for ages, and it is now widespread in many countries, especially in the United States. It is generally acknowledged that it can help the teachers to develop themselves and students' learning simultaneously (Inprasitha &

Loyphar, 2008). In Japan, the lesson study is the practical method to develop the profession and the lesson through the teachers' cooperation. The teachers participation in learning more effective practice leads to the promotion of developing the teachers and better learning achievement of the students (Lin, 2009). As for Thailand, the lesson study and the open approach that is in the form of the teachers' professional development in Japan have been applied as the guidelines for developing the teaching profession since 2006. The initial schools that applled the lesson study and the open approach consist of Kookham Pittayasan School, which is the target of this study, and Choomchon Banchonnabot School in Khon Kaen province. After implementing the project, it was found that the lesson study and the open approach can develop the teachers and the class. It also develops the students' thinking and learning process literally (Inprasitha, 2011a).

Therefore, to ensure that the lesson study and the open approach can be practically applied to develop the teaching profession and the Thai students' creative thinking with regard to the policy of educational reform and the national development strategy, the researcher carried out this study to explore whether or not the lesson study and the open approach can encourage the Thai students' creative thinking. As a result of the study, the teachers who participated in the project were more confident in teaching. In addition, the teachers who taught other subjects could apply the instructional guidelines to adapt and develop their students' creative thinking and the national education policy.

Background

Mathematical Creativity

Mathematical creativity is defined differently. Poincare (1948), for example, described that the mathematical creativity referred to the ability to construct mathematical alternatives leading to success. Additionally, Haylock (1987, p.59) classified mathematical creativity regarding its importance in two types: the ability to overcome obstacle conditions of mathematical problem-solving; and the ability to produce various kinds of products in the mathematical situations. Moreover, Saito (1998, p. 19) discussed that creativity in a school context referred to the ability to produce new valuable things, and valuable things assessed by group members while the students were coping with the problems. It also referred to an individual characteristic. Furthermore, Brunkalla (2009, p.257) pointed out that there were 3 important methods relating to the students' mathematical creativity, noting that 1) the abstract creativity related to the model construction that reflected the real world. The problems were solved by using mathematical tools, and the students could learn by themselves; 2) the connective creativity referred to awareness of determining what mathematical tools could be applied to the new situations and cope the problems with the new methods; and 3) the research creativity was the recovery the new mathematical tools to fit for the problems that have never been solved.

In conclusion, the mathematical creativity is the ability of thinking in solving problems by different, various, and new methods. The process of mathematical creativity appeared in the context rather than in emptiness (Williams & Yang, 1999; cited in Kao, 2007). Thus, encouraging the students' creativity needing to be provided an open-minded atmosphere and the opportunity for the students to express different opinions, to raise the questions freely, and to give the students' rights to select the learning resources and the methods freely (Huai-en, 2004, p.8).

Lesson Study and Open Approach Context in Thailand

The lesson study is the current issue in which many countries are interested. As a matter of fact, the lesson study reflects the process of the teacher's attempt to develop the teaching methods gradually in cooperation with other teachers in order to determine and criticize one's teaching techniques. Additionally, the lesson study played the role as a tool for the teachers to develop and investigate their teaching. Thus, the lesson study became interesting at an international level (Baba, 2007, p.2).

The open approach is the teaching method that aims at encouraging each student to learn Mathematics with their own power and capability. For this sense, the teachers need to understand the students' concepts as much as possible so that it would be a guideline for the teachers to stimulate, support, and provide learning experiences for the students. Thus, they could develop their autonomous learning according to their potential (Loypha & Inprasitha, 2004, p.19). Moreover, Nohda (1993, p.8) added that the class implementing the open

approach could share the interests to the whole class with a focus on discussion and mathematical communication. In addition, the process of assessing the open approach focuses on the process of mathematical thinking and creativity of the students rather that the correct answers. Besides this, Inprasitha (2011b, p.56) defined the open approach that "it is the teaching guideline consisting of 4 steps; posing open-ended problem, students' self learning, whole class discussion and comparison, and conclusion by summing-up by connecting students' emergent mathematical ideas".

Implementing the lesson study and the open approach in the school for developing the Mathematics teacher profession in Thailand successfully is quite difficult. It still encounters the problems and takes time to carry out and to find out the suitable strategies. As the result, Inprasitha (2012, p.234-74) was aware of such a problem and provided the context that encouraged the teachers to work together in the school and led to the development of mathematical learning, which comprised 1) providing the team for the lesson study to work together continuously, consisting of the teachers, the observation teachers, the administrator, the educational supervision, the student teacher, the researchers, and the specialists from the Center for Research in Mathematics Education; 2) providing time for the teachers to design the lesson plans, to observe the class, and to reflect the lesson at least once a week; 3) developing the lesson plans based on the open approach and open-ended problem situations continuously and regularly; 4) applying the mutual lesson plans to the real classroom and the teachers needed to follow the four steps of the open approach, to use the main and supplementary materials, and to set the team who took part in planning the lesson plans for observing the classroom continuously and regularly to record the students' thinking methods, the observation items, the teachers' roles, the problem issues, and the new occurrence in the classroom. This was done to compile the issues occurring in the class for adapting and developing the further lesson plans; 5) reflecting the issues that had been already planned, on-going issues found in the real classroom, and problems and obstacles continuously and regularly to take those issues into consideration for adapting and developing the further lesson plans; and 6) inviting the specialists in the country and from the foreign countries to give the special lecture for the teachers and other related people in the school, and to visit and observe the teachers' classroom. The teachers might take this opportunity to take advantages from the suggestions, and to share opinions and experiences with other people. Moreover, it could encourage the teachers' moral support for working in the school.

The above-mentioned context preparation was implemented in Kookham Pittayasan School since 2006. The Bureau of International Cooperation Strategy and the Office of

the Higher Education Commission supported the Center for Research on International Cooperation in Educational Development of Tsukuba University in Japan to propose the project "A collaborative study on innovations for teaching and learning mathematics in different cultures among the APEC member economies to the Human Resource Development Working Group", to the APEC HRDWG Conference. It was approved and carried out continuously for 5 years from 2006 to 2010. This project was highly acknowledged by the APEC HRDWG Conference in terms of being a continuous project rather than a 1-year project. Additionally, this project was considered the best practice for applying the innovation of the developed countries to improve the quality of education of the developing countries in the APEC members.

In 2009, the Office of Higher Education Commission and the Office of Basic Education Commission assigned the Center for Research in Mathematics Education to carry out a pilot study to implement a lesson study and an open approach under the project on the development of the Mathematics teaching profession through the lesson study and the open approach. Kookham Pittayasan School was the learning resource for the pilot extension among the nineteen schools.

The previous performance of Kookham Pittayasan School under the supervision of the Center for Research in Mathematics Education resulted in an international impact. At the national level, it resulted in many policy sectors, for example the Office of Higher Education Commission, the Office of Basic Education Commission, and the Office of Education Council. It could be noticed that the innovation of the lesson study and the open approach carried out in Kookham Pittayasan School was acknowledged at the national and international levels, that it could probably change the teachers and classrooms, and help the student to develop their thinking and learning process. Moreover, it could be the basis of a new trend to develop the Mathematics teaching profession that aims at developing the practical performance, and displays the guidelines to develop an innovation that brings about the model of practical success in developing the teaching profession sustainably in the future.

Method

Target Group

The purpose of this study was to investigate the students' creative thinking in the lesson study and the open approach context. The target group consisted of eight 7th grade students who studied in the first semester of the academic year 2015, and who had been taught through the lesson study and the open approach for six years, at Kookham Pittayasan School, Sumsoong District, Khon Kaen Province. It was a model school that had been continuously applying the innovation under the project of developing the Mathematics teaching profession through the innovation of the lesson study and the open approach, held by the Center for Research in Mathematics Education, Faculty of Education, Khon Kaen University, for over ten years since 2006.

The implementation of the project in the school will be a collaboration between the teachers, the observation teachers, the student teachers of Program in Mathematics Education, Faculty of Education, Khon Kaen University. The student teachers will be trained to have the knowledge and experience on innovative lesson study and open approach for four years before leaving teaching. In this research**,** the teachers, the observation teachers, the student teachers served as team lesson study, by design the lesson plans, to observe the

class, and to reflect the lesson at least once a week, and as who provide information needed to research.

Research Procedures

As this study investigated the students' creative thinking in the lesson study and the open approach context, the researcher selected the school which carried out the lesson study and the open approach based on Inprasitha's concepts (2012) continuously and regularly at least six years.

The researcher reviewed the synthetic reports of the academic management styles in the schools where it applied to the innovation of the lesson study and the open approach based on Inprasitha's concepts (2012). In addition, the researcher inquired about the information from the teachers, the observation teachers, the student teachers, and other related people in order to estimate the target group. The procedures of investigating the students' creative thinking comprised observing, recording a video, gathering the students' products from all three units with seventeen lesson plans, and evaluating the students' mathematical creativity based on the theoretical framework of Saito (2008) consisting of four types; divergence, fluency, flexibility, and originality, are described in assessment criteria.

Research Instruments

The research instruments consisted of the seventeen lesson plans that followed the teaching procedures based on the open approach. Those were the lesson plans that had been continuously developed since 2006 to the present time by the team of the lesson study in 7^{th} grade and the specialists of the project. During the instruction, the researcher observed the behaviors, recorded a video while the students were accomplishing the activities, and analyzed the students' mathematical creativity at the end of each lesson plan by evaluating the students' products. After implementing all seventeen lesson plans, the researcher examined the students' mathematical creativity individually according to Saito's assessment form (2004).

Assessment Criteria

The researcher employed the assessment criteria for creative thinking based on the theoretical framework of Saito (2008) consisting of four types; divergence, fluency, flexibility, and originality, which was applied to evaluate the mathematical creativity as the follows.

Divergence was evaluated by means of the numbers of all correct and incorrect answers that the students could solve the problems, and marked each answer as one point. The total mark was represented as.

Fluency was evaluated by means of the numbers of the correct answers, and marked each answer as one point. The total mark was represented as.

Flexibility was evaluated by means of the types of the answers, grouped each type of the answers, and marked each type of the answers as one point. The total mark was represented as.

Originality was evaluated by means of the type of the original answers that had never occurred in the instruction of the target teachers, and marked each type of the original answers as one point. The total mark was represented as.

Results and Discussion

When assessed students' work from group activities of 17 lessons, we found that all group of students showed creative thinking in all components such as Students' work from group activities Make a pond with these following locations.

- An equal distance from the school and the clinic.
- The location closest to the home of the village elder.

Idea of group A, Use a ruler to measure the distance from the school to the clinic. Split distance in half and draw a perpendicular to the point where half of a distance. Then draw a perpendicular to the split line to the home of village elder.	**Idea of group B,** Use a ruler to measure the distance from the school to the clinic. Split distance in half and draw a perpendicular to the point where half of a distance. Then, find the closest distance from the home of village elder and the perpendicular by using a dividers. The point to build a pond is where the line tangent between the circle and the perpendicular.	**Idea of group C,** Use a dividers to draw circles with a radius equal. The center of the circle is the school and the clinic. And the intersections of radius equal circles are the point that make an equal distance from the school to the clinic. Then draw a straight line through all points and draw one more from the home of village elder to nearest intersection

Figure 1 Works activities of the group A, B, and C

The pictures above show the different ideas between a groups of students. When each group presented their own work to the class then students learned and shared their opining together that in created more new ideas. And everybody had the best conclusion that is "Using a dividers to draw two circles with a radius equal and the center of a circle is the school and the clinic. Then, draw a straight line through the point where two circle intersect that make and equal distance from the school to the clinic. After that, draw a circle that come together with a straight line before to get the position to make a pond.

When examining the students' mathematical creativity individually according to Saito's assessment form (2004). The results of the study revealed that all of the students in the lesson study and the open approach contexts had creative thinking consisting of divergence, fluency, flexibility, and originality in all items. The mean scores ($\bar{x}$) and standard division (S.D.) of each type of creative thinking were $\bar{x}_{divergence}$ = 7.3 (S.D. =2.38), $\bar{x}_{fluency}$ = 6.7 (S.D. = 2.19),

$\bar{x}_{flexibility}$ = 1.4 (S.D. = 0.32), and $\bar{x}_{originality}$ = 0.4 (S.D. = 0.27), respectively. Results show that score of divergence and fluency were high otherwise flexibility's score and originality's score were low. When focus on thinking ability, all students' thinking were able to solve each questions. However, the standard deviation of the students has no difference for each type of thinking. Although, the some student has score of divergence, fluency, and flexibility was low, originality was equivalent student who has score of divergence, fluency, and flexibility was high. Because of the teacher emphasized the diversity idea and a new worth.

Conclusion

As this study investigated the students' creative thinking in the lesson study and the open approach contexts, the researcher studied the context and possibility for conducting the research by means of studying the operation of Kookham Pittayasan School, Sumsoong District, Khon Kaen Province in terms of the lesson study and the open approach, and students' Mathematical creativity. The results of the study revealed that the target school administered the instruction regarding the lesson study and the open approach continuously and regularly since 2006 to the present time under the monitor and supervision of the Center for Research in Mathematics Education, Faculty of Education, Khon Kaen University. Additionally, it provided the context for the teachers in the school to work together for developing the practical performances in teaching Mathematics and for sharing the methods of teaching Mathematics among the teachers, which led to the development of students' leaning in Mathematics.

The overall operation based on the process of the lesson study and the open approach of Kookham Pittayasan School during the period of ten years caused changes in the teachers, the students, and the cultures in the class. In other words, the learning atmosphere was flexible and the students were active in learning and assertive. Additionally, the students were encouraged to think differently and dealt with the problems or activities extensively without easily surrendering or giving up. Besides these changes, the students had positive attitudes towards working in groups or with others. The teachers could build the creative circumstances and encourage the students to percept their own abilities by providing the atmosphere that the students felt safe, dared to take a risk, and interacted with others. These were the crucial behaviors that encouraged the creativity according to the concepts of Nadjafikhah, Yaftian, and Bakhshalizadeh (2012).

After investigating the students' creative thinking in the lesson study and the open approach contexts, it was found that all of the students had used creative thinking consisting of divergence, fluency, flexibility, and originality in all items. The instructional management regarding the open approach encouraged the students to understand the learning topics by themselves through the activities of the open-ended problem situations. Besides the activities, the teachers employed the main and supplementary materials to encourage the students to figure out the meanings, the rules, and the formulas by themselves, which conformed with Hashimoto's concepts (1997), noting that the open approach was one of the methods that promoted mathematical creativity and played an immense role for the students to enable to collect the various methods of thinking about problem-solving. The mathematical creativity could be frequently found from collecting the different appearances of the classes and students.

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The Effects of the Dynamic Electronic Lesson Based on the Open Approach in the Lesson Study Context

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- **Kiat Saengarun**
- **Somkuan Srichompoo**

Abstract: *The purpose of this article was to investigate the effects of the dynamic electronic lesson for Mathematics teaching based on the open approach on the mathematical concepts of addition of first grade students. The target group consisted of three teachers, the director, and first grade students in the schools which implemented the innovation of the lesson study and the open approach. The research methodology of this study was the teaching experiment. The data were collected in the form of a video-recording. The results of the study revealed that the implementation of the electronic lesson based on the open approach developed the students' mathematical concepts in addition in two meaning that is the expression "increase" and the expression "combine". Moreover, it could help the students to relate the real world to the mathematical world.*

Keywords: Dynamic Electronic lesson, Open approach, Concepts of addition, Lesson study

Introduction

According to the considerable change and progress of technology in the 21st century and in Thailand, many teachers paid attention to developing the materials and equipment rather than applying the contents from the technological materials and the information to the instruction. Additionally, it is found that the teachers cannot absolutely implement the technological materials to the instructional management. They also lack the ability to apply the technology for developing the instructional materials. As the government relies on the importance of technology which can be applied in the classroom lessons and highly benefit the students, the national electronic-learning system is promoted as the device for changing the learning concept to a learner-centered concept (Ministry of Education, 2013). Thus, the application of the technology is essential for teaching. It interacts between the knowledge and the teacher's methods to be applied in the specific situations or in the classroom context. It can be said that it does not matter what method is considered the best for integrating the technology and the curriculum. However, the attempt of integration need to be concerned about designing the lesson creatively via the technology or providing the content structure specifically in the classroom context (Koehler & Mishra, 2009).

Nowadays the classroom provides the instructional circumstances that the teacher and students can access to modern technology and instructional materials. Thus, the technological integration and application play more important roles as compared to the past. Applying technology in teaching Mathematics is not only the way to teach the students

about the technology, but also it is the way to use the technology to promote Mathematics instruction (Dog˘an, 2012). Similar to the notion of the National Council of Teachers of Mathematics (NCTM, 2000), it places importance on the technology supporting the instruction so that the students can understand Mathematics more effectively. The particular technology implemented for supporting the instruction and promoting the students' learning needs to encourage the students to interact with the technology in order that they can understand the contents the teacher has already planned.

It is rather difficult for first grade students to understand the meanings of addition and subtraction signs. However, the prerequisite of the students' learning is changing the teaching methods to the class discussion about the variety of problem-solving instead of finding the answers quickly and correctly (Fuson, 1992). To supplement the dynamic dimension to the instruction through the electronic lesson with a focus on dynamic objects or materials will promote the students' learning in Mathematics (Inprasitha, 2013). Moreover, Hoyles et al. (2013) discusses that the dynamics help the students develop their understanding of the concepts, and help them couple the existing knowledge with the new knowledge and the mathematical concepts in physical situations. In a similar way, Arcavi and Hadas (2000) mention that the dynamic activities of the Mathematics program will help the students practice, figure out, and learn Mathematics. The principle factor for designing the qualitative electronic lesson is designing the lesson with regard to the instructional approach (Spanovic, 2010; Drijvers, 2012).

The open approach regarding Inprasitha's concepts (2010) implemented in the Thai context is the teaching methods focusing on the problem-solving process. It encourages the students to deal with the problems which are presented by the teacher. To start with, the teacher will raise the open-ended problems and then encourage the students to learn by themselves through problem-solving. At the end of the lesson, the teacher allows the students to discuss, compare the concepts, and summarize the lesson together with relating to the acquired Mathematical concepts. Thus, the guidelines of applying the technology to the instructional management promotes the students' learning, this study presents the effects of implementing the open approach instruction via the dynamic electronic lesson for mathematics on concepts of addition of first grade students.

Research Objective

The objective of the research is to investigate the effects of the dynamic electronic lesson for mathematics based on the open approach to the mathematical concepts of addition of first grade students.

Research Design

This study presents the effects of the dynamic electronic lesson through the open approach. It was considered to be a teaching-experimental research based on the notion of Steff and Thomson (2000), which are the sequences of the instruction comprising the teachers and, students' grade 1, the observations of teachers as witnesses of the instruction, the researcher, and the researcher's assistant. During the instruction, the video, photos, and sound were recorded. The procedures of the lesson study (Inprasitha, 2010) were as follows: 1) the research team planned the lesson, and explored the concepts in addition of students' grade 1 and the materials from the Japanese Mathematics textbooks which were translated into Thai (Inprasitha et al., 2010), and designed the dynamic electronic lesson; 2) the student

teacher implemented the dynamic electronic lesson, and was observed by others in the research team. The procedures of the open approach consisted of four steps; 1) the teacher employed the electronic lesson to present the problems; 2) the students in each group helped one another to solve the problems while the teachers were observing the students' concepts; 3) the students presented their concepts together with discussion with the whole class; and 4) the teacher concluded the lesson from the students' concepts and related it to the lesson goals: 3) the research team reflected the students' concepts and the interaction among the students, the teachers, and the electronic lesson. The target group consisted of students' grade 1, a student teacher, two teachers, and a school director. Both of the teachers and the director had 8-years experience in teaching through the open approach and had participated in the project of the professional development of the Mathematics teachers through the lesson study and the open approach, which was held by the Center for Research in Mathematics Education, Khon Kaen University in 2005, and followed up the three phases of the lesson study (Inprasitha, 2011).

Data Analysis

The data from the audio transcription and video recording during the instructional management in Unit 1: Addition (1) were analyzed and interpreted based on the conceptual framework of Hattori (2010). The data obtained were analyzed. The students' products and concepts were also analyzed in each teaching procedure of the open approach and in each electronic lesson. In addition, the results of the reflections were analyzed as in the following examples. Having implemented the electronic lesson based on the open approach (Inprasitha, 2010), it was found as follows:

Phase 1: Posing open-ended problems

The teacher turned on the motion of pouring the fish in an1 aquarium to stimulate the students' interest as shown in Figures 1 and 2. All of the students said, "Wow, there are three fish here and there are two fish over there", which indicated that all students were interested in the problem that the teacher dynamically presented. They were curious to know, and needed to find out the answer. It was remarked that all students said, "All fish go around in the aquarium." Then, the teacher asked the students to count the total amount of the fish in the aquarium. (See figure 1).

Figure 1: Presenting the Dynamic Problem Situation through the Electronic Lesson

Figure 2: The Dynamic Problem Situation Presented via the Electronic Lesson about Pouring Two Glass Jars of Fish Simultaneously in the Aquarium

Phase 2: Students' self-learning

The teacher gave the students worksheets relating to the motion in order that the students could describe their methods to figure out the total amount of the fish. At the same time, the teacher observed the methods the students used, and facilitated the students while they were accomplishing the activity. The following figures demonstrated the methods used by the students in each group.

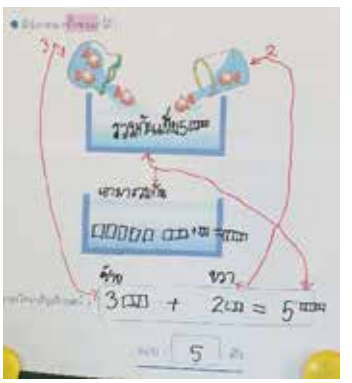

Figure 3: Concept of Group 1

Group 1

The students used the blocks representing the amount of the fish in each glass jar and then wrote " *There are totally 5*." to represent the total amount of fish. They wrote the sentence " *Put them together*" to represent pouring the fish into the aquarium. They wrote the digit 3 to represent the fish on the left and 2 to represent the fish on the right. Then, they wrote the digit 5 to represent the total amount of the fish, whereas the signs (+) and (=) appeared after the whole class discussion.

Figure 4: Concept of Group 2

Group 2

The students used the blocks representing the amount of the fish in each glass jar and then wrote the digits 3 and 2 at the aquarium to represent the total amount of the fish. In addition, they used the arrow to connect the digits with the amount of the fish in each glass jar. After that, they wrote "Put them together" to represent pouring the fish in the aquarium simultaneously. However, the equation was written after discussing with the whole class.

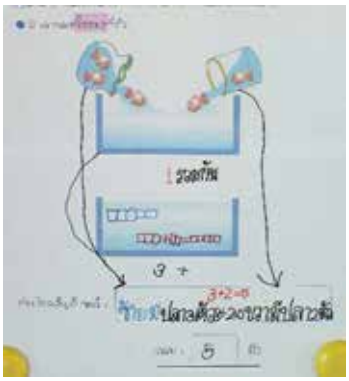

Figure 5: Concept of Group 3

Group 3

The students used the blocks representing the amount of the fish in each glass jar and then wrote 5 blocks at the aquarium and described that " *There are 3 fish on the left and 2 fish on the right*. *The answer is 5*". They also drew the arrow to connect the amount of the fish in each glass jar with the digits they had written. However, the equation was written after discussing with the whole class.

According to the above figures, it showed the students' problem-solving by describing the amount of the fish in each glass jar and in the aquarium, the mathematical sentence, and the diagrams to connect the fish (real world) with the mathematical sentence (mathematical world).

Phase 3: Whole class discussion and comparison

The teacher asked the students to present the concepts of each group to the whole class. Then, the teacher and the students discussed about the amount of the fish in each glass jar, and the direction of pouring the fish in the aquarium through the motion together with writing the mathematical sentence on the electronic lesson due to the following protocols.

Teacher 1: Where can we get these three fish?
Student: From the left of the goldfish.
Teacher 1: Where's it? Here?
Student: Yes, that's right.
Teacher 1: Let me connect the digit with the fish.
Teacher 2: Is that correct?
Student: Yes, of course.
Teacher 2: Then 2 is from…, isn't it?
Student: Yes, it is. 5 is from the goldfish on the left and right.
Teacher 2: And put them together in…
Student: In the aquarium.
Teacher 2: Yes, the goldfish are in the aquarium.
Student: 3 plus 2 equals 5.

The above protocols showed the interaction between the teachers and the students in discussing the digits that represented the amount of the fish in each glass jar and the result after pouring the fish altogether.

Figure 6 : Students' Presentation and Comparative Discussion as the Whole Class

Phase 4: Summarization through connecting students' mathematical ideas emerged in classroom

The teacher and the students made conclusion by relating the mathematical sentence to the picture of pouring the fish, and circling the fish in each glass jar and the mathematical sentence. The diagram was written in order to relate the problem situation to the students' mathematical concepts as shown in Figure 7.

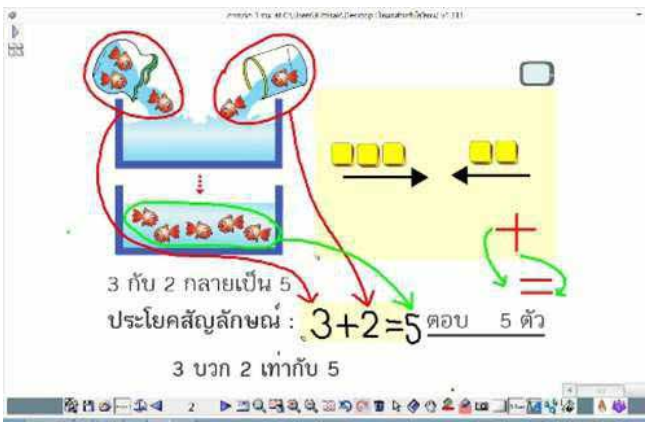

Figure 7 : Students' Mathematical Concepts

According to the teacher's reflections after the instructional activities, the teacher and the observation teacher gave the opinions that the instructional management through the electronic lesson could help the students to learn more quickly and grasp the students' interests as noticed from the teacher's reflections below.

> *"This electronic lesson can encourage the students to understand the concepts in addition because the students can see the fish pouring in the aquarium simultaneously instead of pouring from one side and then another side. This can be considered that it accomplished the objectives. In addition, the students use their body language to understand the concept that the hands move at the same time, and that one hand doesn't*

go after another hand. There are fish in two hands and then the fish are filled in the aquarium..."

(Teacher 1 reflecting on July 1, 2015, translated from the Thai original)

"The video allows the students to see the movement and the students can find that there is a glass jar on the left and another one on the right, which elicits the students' concepts and can classify that the fish on the left are three. After switching on the video, the students can immediately answer that there are five goldfish totally. They give the answer together with showing their fingers. It is rather different from the traditional method that uses the paper… That is we know when it needs to show, to hide, or to hint. This is what we can manage. Unlike the paper, pouring the fish in the aquarium lets the students see the fish obviously and the teacher can manage it."

(Teacher 2 reflecting on July 1, 2015, translated from the Thai original)

"I think it is important and I feel excited for the students today. Generally, the instructional medium is a paper or an authentic fish which we don't really want to kill them unintentionally. This activity doesn't tend to torture an animal, and the teacher can grasp the students' attention to the video because it seems that the fish are authentically swimming. The students are excited and understand. Thus, using the hands while watching the video can help the students to understand what the addition symbol is."

(Teacher 3 reflecting on July 1, 2015, translated from the Thai original)

According to the director's reflection after having observed the class with the electronic lesson, it was found that it interested the students as if it was authentic material. It could be repeated and different from the former materials. Additionally, it could encourage the interaction between the students and the teacher as evidenced in the excerpt below.

"…it's the dynamic tool as if they are real fish. I t can be said that it provides the authentic and dynamic dimensions which interest the students. It's not the raw material that the students only watch on television, but it's the material that can encourage the students' interaction."

(Director reflecting on July 1, 2015, translated from the Thai original)

Results and Discussion

The electronic lesson with the dynamic dimension could initiate the students' mathematical concepts in addition as evidenced in the followings.

1. Combine: According to the Figures 3-5, it showed that the students could describe the problem situations presented through the electronic lesson (Figure 2) about pouring the fish from two glass jars in the aquarium simultaneously and the fish were swimming in the aquarium. This demonstrated the direction of putting two objects or numbers at the same time. The students' concepts occurred after accomplishing the mathematical activity

to find out the amount of the fish in the aquarium were 1) the students drew the blocks to represent the amount of the fish and the arrow to represent the addition of the blocks; 2) the students wrote the texts to represent the amount of the fish and the way of pouring the fish in the aquarium; and 3) the students wrote the mathematical sentence 3+2=5 to represent the process of pouring the fish from the two glass jars in the aquarium, noting that 3 represented the fish in the left glass jar and 2 in the right one, and 5 represented for the total amount of the fish in the aquarium. Moreover, the students could draw the diagram to relate the real world (fish swimming in the aquarium) to the mathematical world (mathematical sentence 3+2=5). The students could also demonstrate the direction of two objects moving towards each other at the same time to represent the combine of addition, which encouraged the students to discern the Part-Part-Whole concept as noticed from the gestures that the students moved their hands simultaneously at the same time to describe the combine of addition.

2. Increase: With regard to the problem situation as the Figure 8, it described the way of pouring the fish from the glass jar in the aquarium and the fish were swimming in the aquarium. This represented the existing objects or amounts and the direction of adding the objects or the amounts to escalate the amounts or the objects.

Figure 8: Problem Situation Presented through the Dynamic Electronic Lesson about Pouring the Fish in the Aquarium

The students' concepts occurred after accomplishing the mathematical activity to find out the amount of the fish in the aquarium were as follows 1) the students drew the blocks to represent the amount of the fish; 2) the students wrote the texts for examples, "original-new" and "existing-adding", and the diagram to relate to the amount of the fish; and 3) the students wrote the mathematical sentence 6+2=8 to represent the amount of the fish, noting that 6 represented the fish in the aquarium or the original fish, 2 represented the fish that were poured or the additional fish, and 8 represented for the total amount of the fish in the aquarium. Additionally, the students could draw the diagram to relate the real world (fish swimming in the aquarium) to the mathematical world (mathematical sentence 6+2=8). The electronic lesson could demonstrate the motive direction of two groups of the objects moving towards to represent the increase of addition, which encouraged the students to discern the Change-Add-To concept as noticed from the gestures that the students moved their right hands towards their left hands to describe the increase of addition.

Conclusion

The open approach was considered an instructional approach focusing on the students' problem-solving through the problem situations presented by the teacher. The problem situations designed in the form of the dynamic electronic lesson (Inprasitha, 2013) could encourage the students to understand the problems through the problem situations, and

to admit that the problems belonged to them (Isoda, 2012) and needed to be solved. In addition, the electronic lesson could develop the students' perception of the mathematical concepts. In other words, it could encourage the students to notice the motion of the object and then describe the concepts in addition quickly that there were two types of its meanings: the combine and increase of addition (Hattori, 2010). According to the empirical evidence derived from the teachers' reflections, noting that "As soon as turning on the motion, the students can answer that there are five goldfish totally, and they describe together with showing their hands that three fish are on one side and two on another side." Another teacher reflected that "It can elicit the students immediat ely", which pointed out that the electronic lesson with the dynamic dimension (Inprasitha, 2013) in the virtual situation that the teacher carrying out for the instructional management could encourage the students to perceive the mathematical concepts through the relation between the physical situation and the mathematical concepts in addition comprising the meanings of the addition, symbols (+) and (=), writing the mathematical sentence from the problem situation, constructing the problem situation from the mathematical sentence, and enabling to add the amount with its result that was less than 10.

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An Analysis of Grammatical Errors in English Writing of Thai University Students

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- **Prapart Brudhiprabha**

Abstract. *The purposes of this study were to investigate grammatical error types and analyze sources of the errors in English writing. The collected data were from 34 English essays written by 34 Thai second year English majors in one university in Thailand. The data were analyzed based on the framework of grammatical error classification to find the error types, frequencies, percentages, and ranks. Furthermore, plausible causes of the errors were explained by counting on the two error sources: 1) interlanguage errors and 2) intralingual and developmental errors.*

The research findings revealed that 2,218 grammatical errors were found in both of two main types: morphological errors (81.97%) and syntactic errors (18.03%). Of all two main types, there were 32 error sub-types. The three most frequently found errors were singular/plural errors (30.43%), article errors (21.51%), and preposition errors (5.23%) respectively. In regards to the sources of the errors, both of the interlanguage errors and the intralingual and developmental errors had influences on the errors made in the writing. The interlanguage errors occurred when the students attempted to use their existing knowledge of L1 structures to acquire the target language, but differences between the two languages caused them to apply the structures incorrectly. The intralingual and developmental errors were found because of difficulties and problems within the target language itself. The findings were beneficial for learning and teaching of English writing. They could enable the students to be aware of common grammatical error commission while writing English. In addition, the students might get more understanding of influential sources of errors made. Moreover, the teachers and the syllabus designers could use the results as guidance to design and develop more suitable teaching material and techniques.

KeyWords: English Writing, Error Analysis, Grammatical Errors, Interlanguage Errors, Intralingual and Developmental Errors

Introduction

English writing is a very important skill which is widely used as a device to facilitate and present students' educational knowledge and occupational opportunities (Chen, 2007). In terms of the educational aspect, three reasons which make this skill necessary are that more international linguists are promoting writing as their field of specialization, more articles and journals are being published in English, and more international students are pursuing their degrees in English speaking countries (Santos, 2000). Besides, the English writing skill also enhances the students' occupational opportunities. More and more companies require their job candidates to have good command of English writing because workers have to use this skill in many types of organization communication such as e-mails, reports, presentations,

sales material, visual aids, etc. With several benefits of the English writing, Thai universities include many English writing courses as compulsory or selective academic subjects in the curriculum for their students with purposes to develop the students' English writing skill and support them to receive better educational and occupational opportunities (Chuenchaichon 2015; Watcharapunyawong and Usaha, 2013). However, Thai students cannot yet master in this skill because they have produced ambiguous written communication due to inability to apply English grammar appropriately in their writing. Evidence of this problem has been revealed through the students' various grammatical errors made in the written tasks (Chuenchaichon, 2015; Likitrarattanaporn, 2002). Those errors could prevent the students to be competent in English writing as Jenwithisuk (2009) stated that communication through a written approach would be accomplished if transmitted messages are error free because the errors can cause total misunderstandings between writers and readers who have different languages and culture backgrounds. The occurrences of errors in English writing can be considered from two main sources: 1) interlanguage errors and 2) intralingual and developmental errors (Brown, 2000). The errors seem to be a negative production of English writing, but a study of Error Analysis (EA) yields English writing learning and a pedagogical process. EA can express what aspects in grammar are difficult for the learners, and obtaining feedback stimulates their new attempts to successfully approximate the target language (Myles, 2002). Even if there were some studies of grammatical error analysis, the students still produce grammatical errors. That is because the characteristics of the errors are varied according to each particular learner and learning context, so they may have different needs and individual difficulties (Chuenchaichon, 2015). Therefore, in order to improve the students' English knowledge and design proper teaching material and courses, it is important for researchers and English teachers to initially investigate the English proficiency levels of each particular group of students, and to know what the most important English learning units are that the students should undertake through their errors (Suwannaset, 2013). Consequently, it is worthwhile to use Error Analysis to find particular problems of using grammar in English writing encountered by Thai second year English majors. The research objectives are to find out answers of the following research questions:

1 What types of grammatical errors are found in the English writing of Thai students?

2 What common grammatical error types are frequently used in their English writing?

3 How do interlanguage errors and intralingual and developmental errors plausibly affect the grammatical error commission in their English writing?

Literature Review

Errors in English Writing

Writing is a complex process and difficult task even in the first language because effective writing production requires several components including contents, organization, and language competence (Richards and Renandya, 2002). Unquestionably, it becomes more complicated and difficult task for Thai students who learn English as a foreign language because of the target language knowledge inefficiency of the Thai students (Chuenchaichon, 2015; Watcharapunyawong and Usaha, 2013). Having inadequate grammatical knowledge of Thai students became one of the main problems which prevent them to be successful in the English writing because they still produce many common errors of English grammar (Chuenchaichon, 2015). Brown (2000, p.217) explained the errors as "noticeable deviations from the adult grammar of a native speaker, reflecting the interlanguage competence of

the L2 learner". The errors are systematic deviations, which occur when L2 learners have not learned something and consistently make them wrong, so the errors reveal L2 learners' competent levels in the target language (Brown, 2000; Norrish, 1983). Ellis (2008) and James (1998) provided more information that the errors are unnoticeable points for the L2 learners. They reflect the gaps in the learners' knowledge because they cannot identify if the errors are correct or incorrect, so the errors occur finally. Brown (2000) and Coder (1981) stated that the learners may believe that their languages are correct, and they do not know the correct forms should be. Even if the learners acknowledge the errors, they cannot correct them. The errors are different from mistakes, which are productions of the learners' performance deficiency. The mistakes are related to slips of the tongue, which are generally one-time-only events. The learners who make mistakes have noticed or been taught L2 grammar structures comprehensibly, but they are unsuccessful to apply grammatical rules. The learners are able to recognize deviant forms as the mistakes and correct them if it is necessary. With these reasons, the errors become significant for the study of error analysis because they reveal evidence that the L2 learners use definite systems of language at every point in their language development systems and at the particular points in the situation, whereas the mistakes are not relevant to the error analysis because they are non-systematic.

Interlanguage Errors and Intralingual and Developmental Errors

The interlanguage errors and the intralingual and developmental errors are two sources of errors in L2 learning (Brown, 2000). The first error source called interlanguage errors refers to a negative transfer of the first language, namely L1 interference. The negative transfer takes place from differences between linguistic features of the first language and the target language, and the learners attempt to generalize their prior knowledge and experiences of the first language in learning the target language but apply them incorrectly. This negative transfer leads to error commission and becomes the important source of errors in the L2 learning (ibid). Lado (1971) claimed that differences between linguistic properties of the two languages can be predicted the foreign language learning difficulties, and if the differences are greater, the degrees of expected difficulties are higher. Thep-Ackrapong (2005) pointed out that English and Thai are different at all levels: pronunciation, word, grammar, and text. Therefore, the Thai students have to encounter high degrees of difficulties in L2 writing because most of Thai language systems are different from the English systems. Thai students have considered grammar, which is one of the important components of English writing, very difficult. As a result, the grammatical errors in English writing produced by the students can be made at all times. This following is an interlanguage error made by Thai L2 students.

Example, There is no *<u>difference</u> between them.

However, besides the interlanguage errors, the errors can occur because of the intralingual and developmental errors. Richards (1974) explained that the intralingual and developmental errors happen regardless of the L2 learners' first language backgrounds. They reflect the learners' competence at a particular stage and explain some of the general characteristics of language acquisition. Origins of the errors are within the structures of English itself and through learning strategies and teaching techniques in the English language. Under the main source of the intralingual and developmental errors, the errors are resulted from four causes:

1.Over-generalization: it is the blending of two structures in the standard form of the target language. The learners commit errors by using deviant structures based on their

experiences of other structures of the target language. They employ one form or structure in one context and extend its application to other contexts where it should not be applied.

Example, In the past, students *follow the rule of wearing school uniforms strictly.

2. Ignorance of rule restrictions: the learners apply rules to the contexts where they are not applicable. They result from the failure to observe the restrictions of the existing structures.

Example, Now, parents are important people who can tell the students to wear the school uniforms by *encourage them.

3. Incomplete application of rules: the learners fail to use the complete knowledge of the target language. The errors occur when the learners think that their communication is accomplished by using simple rules rather than more complicated structures.

Example, Now, a lot of people usually open Bluetooth while they *using their cell phones.

4. False concepts hypothesized: the learners cannot completely understand target language distinctions, or they perceive inaccurate ideas about language rules. The errors under this cause are sometimes due to poor gradation of teaching items.

Example, He *is speaks French.

Error Analysis (EA)

Error Analysis (EA) was established by Stephen Pit Corder and his colleagues in 1967 (Dulay, Burt, & Krashen, 1982). It emphasizes the significance of errors in L2 learners' interlanguage system (Brown, 2000). The interlanguage, also called a learner language, is a linguistic system used by L2 learners who are not yet fully competent in the target language. The learners also apply some rules of their L1 in production of the target language and create their own language systems, which are different from the L1 and the target language (Brudhiprabha, 2016; Ellis, 2000; Gass, Behney, and Plonsky, 2013). James (1998) noted that EA is processed by comparing between learners' interlanguage and the target language to find out deviant forms, which are judged as the errors. The errors can indicate learners' stages of language learning and reveal the development of hypotheses regarding the rules of the target language. They are considered as evidence of the learners' strategies when they build competence in the target language. EA was proposed on account of the shortcomings of the Contrastive Analysis (CA) which sometimes provides inaccurate and uninformative predictions of L2 learners' errors. The CA processes by comparing the structures of two language systems to find similarities and differences in order to predict possible difficulties that the learners may encounter in an L2 learning situation, and the difficulties could lead to the errors. Nevertheless, characteristics of the interlanguage errors deriving from the studies of Contrastive Analysis also assist to explain some grammatical errors, which occur because of L1 interference (Gass et al., 2013). Brudhiprabha (1972) stated that EA provides useful knowledge to the L2 learners, the teachers, and the researchers because it can lead us to find answers of what grammatical errors learners make, why they make the errors, and how the errors could be explained.

Gass et al. (2013) proposed six steps to analyze grammatical errors committed by the L2 learners, which are collecting data, identifying errors, classifying errors, quantifying errors, analyzing error sources, and remediating. The present study analyzed the research data by following the first five steps of error analysis, which are presented below in Figure 1. However, the sixth step of the error analysis called remediating was not included in this study because it was not relevant to the purposes of this study.

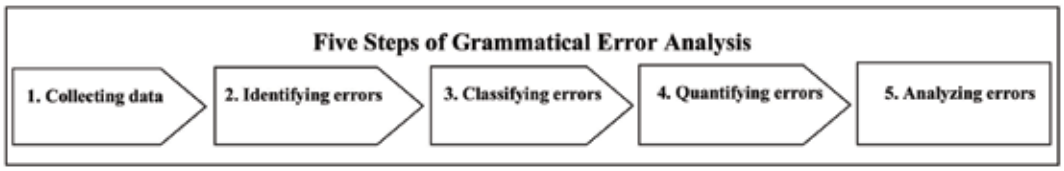

Figure 1 Five Steps of Grammatical Error Analysis
Source: Gass et al. (2013, p. 92)

Research Methodology

Research Design

The researcher conducted this study based on mixed methods, which is a combination of quantitative and qualitative approaches (Merriam and Associates, 2002; Muijs, 2011). The quantitative part of the study was to investigate the grammatical errors in the students' English writing. The findings were presented in terms of frequencies, percentages, and ranks. The qualitative part of the study was to use content analysis to explain how the interlanguage errors and the intralingual and developmental errors plausibly affected the errors made in the writing.

Research Instrument

The research instrument employed in this study was 34 English essays written by 34 Thai second year English majors in one private university in Thailand. They were taking the English Essay Writing course in the second semester of academic year 2014.

Data Collection Procedure

Based on the five steps of grammatical error analysis (Gass et al., 2013), the error analysis started the first step by collecting the last assignments of English essays written by the 34 students. Each student wrote one piece of persuasive essay by selecting one from the three topics based on the textbook: school uniforms, cell phone manners or safety, and global warming. Length of the essay was 300-500 words (A4 paper), and the written task was take home the assignment which needed submission within one week. The researcher asked for permission from the course instructor to have those English essays photocopied. After that the 34 photocopied writings were assigned numbers 1 – 34 instead of students' names for the next step of data analysis.

Data Analysis

The data analysis followed next steps of grammatical error analysis which were identifying errors, classifying errors, quantifying errors, and analyzing errors respectively. As the step of identifying errors, the researcher identified the errors by comparing the students' sentences with what would be the correct sentences in the English. If the sentences were not in accordance with the appropriate usage or norms of English grammatical rules in the particular contexts, they were judged as the errors. Referring to the step of classifying errors, the errors were categorized according to characteristics of each error sub-type based on the pre-set framework of grammatical error classification, which is adapted from Dulay et al., (1982) and James (1998). The researcher underlined the errors and marked asterisks and codes of errors above the students' deviant sentences such as *Nfo for noun form errors

or *Vge for gerund errors, etc. Every occurrence of errors was recorded from each sample even if its occurrence was repeated in order to find the frequency of each error sub-type. According to the step of quantifying errors, the frequencies of each error sub-type were calculated into percentages. The results were recorded in a checking form of grammatical error types with frequencies, percentages, and ranks. Based on the last step of analyzing errors, the researcher analyzed the errors of each sub-type to find how the two sources of errors: the interlanguage errors and the intralingual and developmental errors plausibly affected the error production in their writing.

Accuracy

In order to make the study results accurate, the researcher as an advance learner of English language identified and classified grammatical errors of the 34 English writings by underlying the found errors as well as marking asterisks and codes of errors on the deviant sentences. After that, the English expert was needed to verify the accuracy of the error identification and classification. The researcher randomly selected 10% of the students' original writings together with the writings checked by the researcher to be examined by the expert. The expert and the researcher discussed any disagreement about the error checking.

Findings

Regarding research question 1, "What types of grammatical errors are found in the English writing of Thai students?" the results showed that the found grammatical errors were identified and classified into the two main types: morphological errors and syntactic errors with their error sub-types.

Table 1 Error Types Found in English Writing

Main Types	Sub-types	
1. Morphological errors (deviant forms of English writing in a word level)	1) Noun form errors	9) Model/auxiliary errors
	2) Singular/plural errors	10) Adjective errors
	3) Pronoun errors	11) Adverb errors
	4) Present errors	12) Possessive errors
	5) Past errors	13) Preposition errors
	6) Subject-verb agreement errors	14) Article errors
	7) Gerund errors	15) Possessive (determiner) errors
	8) Infinitive errors	16) Demonstrative errors
2. Syntactic errors (deviant forms of English writing in a sentence level)	1) Word order errors	9) BUT-type errors
	2) Run-on/ comma splice errors	10) OR-type errors
	3) Fragment errors	11) SO-type errors
	4) Omission of subjects	12) Noun clause/phrase errors
	5) Omission of verbs/actions	13) Adjective clause/phrase errors
	6) Omission of objects/compliments	14) Adverbial clause/phrase errors
	7) 'There' structure errors	15) Passive voice errors
	8) AND-type errors	16) Comparison errors

As shown in Table 1, the errors were found in both of two main types of morphological errors and syntactic errors. There were 16 error sub-types occurred in the morphological errors, and the syntactic errors contained 16 error sub-types. However, from the research

findings, there was no error found in four error sub-types: future tense errors, sequence of tense errors, parallel errors, and redundancy errors.

The answers to research question 2, "What common grammatical error types are frequently used in their English writing?", are shown in Table 2.

Table 2 Frequency of All Error Sub-types

Framework of Grammatical Error Classification					
Item	**Error Type**	**Error Code**	**Error Frequency** *(Tokens) (f)*	**% out of Total Errors**	**Rank** *(r)*
1	**Morphological Errors**				
1.1	Noun errors				
	A. Noun form errors	Nfo	17	0.77	21
	B. Singular/ plural errors	Nsp	675	30.43	1
1.2	Pronoun errors	Pro	78	3.52	5
1.3	Tense Errors				
	A. Present errors	Tpr	34	1.53	12
	B. Past errors	Tpa	11	0.50	24
1.4	Subject-verb Agreement Errors	Sv	94	4.24	4
1.5	Verb Form Errors				
	A. Gerund errors	Vge	61	2.75	6
	B. Infinitive errors	Vin	60	2.71	7
	C. Modal/Auxiliary errors	Vmo	34	1.53	12
1.6	Adjective Errors	Adj	45	2.03	9
1.7	Adverb Errors	Adv	19	0.86	20
1.8	Possessive Errors	Pos	57	2.57	8
1.9	Preposition Errors	Pre	116	5.23	3
1.10	Determiner Errors				
	A. Article errors	Dar	477	21.51	2
	B. Possessive errors	Dpo	25	1.13	17
	C. Demonstrative errors	Dde	15	0.68	22
2	**Syntactic Errors**				
2.1	Word order errors	Wor	15	0.68	22
2.2	Ill-formed sentence errors				
	A. Run-on/ comma splice errors	Run	39	1.76	10
	B. Fragment errors	Fra	38	1.71	11
	C. Omission of subjects	Osu	39	1.76	10
	D. Omission of verbs/ actions	Ove	24	1.08	18
	E. Omission of objects/ compliments	Oob	31	1.40	14
	F. "There" structure errors	There	24	1.08	18
2.3	Compound sentence structure errors				
	A. AND-type errors	And	26	1.17	16
	B. BUT-type errors	But	29	1.31	15

Framework of Grammatical Error Classification					
Item	**Error Type**	**Error Code**	**Error Frequency** *(Tokens) (f)*	**% out of Total Errors**	**Rank** *(r)*
	C. OR-type errors	Or	6	0.27	26
	D. SO-type errors	So	13	0.59	23
2.4	Complex sentence structure errors				
	A. Noun clause/ phrase errors	Ncp	38	1.71	11
	B. Adjective clause/ phrase errors	Adjc	32	1.44	13
	C. Adverbial clause/ phrase errors	Advc	19	0.86	20
2.5	Passive voice errors	Pas	20	0.90	19
2.6	Comparison errors	Com	7	0.32	25
	Total		2,218	100%	

Based on Table 2, the results presented that the students totally committed 2,218 grammatical errors under the 32 error sub-types. The three most frequently found errors were singular/plural errors (f = 675, 30.43%, r = 1), article errors (f = 477, 21.51%, r = 2), and preposition errors (f = 116, 5.23%, r = 3) respectively.

According to research question 3, "How do interlanguage errors and intralingual and developmental errors plausibly affect the grammatical error commission in their English writing?", the research findings revealed that both of two main sources had significant influences on the error production. The possible source of each error sub-type was summarized in the Table 3.

Table 3 Summaries of Error Sources under Each Error Sub-type

Sources of Errors	Error Sub-types	
1. Interlanguage errors	1) Noun form errors	9) Word order errors
	2) Singular/ plural errors	10) Run-on/ comma splice errors
	3) Pronoun errors	11) Fragment errors
	4) Modal/Auxiliary errors	12) Omission of subjects
	5) Adjective errors	13) Omission of objects/ compliments
	6) Adverb errors	
	7) Possessive errors	14) 'There' structure errors
	8) Possessive (determiner) errors	15) Adverbial clause/ phrase errors
2. Intralingual and developmental errors		
2.1 Over-generalization	1) Past errors	
	2) Infinitive errors	
2.2 Ignorance of rule restrictions	1) Subject-verb agreement errors	8) BUT-type errors
	2) Gerund errors	9) OR-type errors
	3) Preposition errors	10) SO-type errors
	4) Article errors	11) Noun clause/phrase errors
	5) Demonstrative errors	12) Adjective clause/ phrase errors
	6) Omission of verbs/ actions	13) Adverbial clause/ phrase errors
	7) AND-type errors	

Sources of Errors	Error Sub-types
2.3 Incomplete application of rules	1) Present errors 2) Passive voice errors 3) Comparison errors
2.4 False concepts hypothesized	-

According to the results from Table 3, it showed that both of the interlanguage errors and the intralingual and developmental errors became possible sources of the students' error commission when writing English because both of them were analyzed to be the important causes of found errors. Bases on the error analysis, the influences of L1 interference caused 15 error sub-types, and 18 error sub-types were plausibly resulted from the difficulties and problems within the target language itself.

Discussion and Recommendations

Discussion of Grammatical Error Analysis

By reviewing the researching findings, it showed that the students' proficiency to apply the rules of English grammar was still inefficient because they made several errors under the 32 error sub-types. These errors were commonly found in the findings of the previous studies by Nonkukhetkhong (2013) and Watcharapanyawong and Usaha (2013). Consequently, it could be assumed that the error sub-types found in this study have been common grammatical errors made by Thai students when they write English. However, the error under future tense errors, sequence of tense errors, parallel errors, and redundancy errors was not found. It was because the students might be careful when they used these structures or understand these grammatical rules, thus these four error sub-types might be not the students' problems in this writing. The students produced 2,218 errors in their English writing. The errors found in the morphological errors (f = 1,818, 81.97%) were greater than the syntactic errors (f = 400, 18.03%). It could show that the students had encountered more difficulties of English production in the word level than in the sentence level. This result was in line with the previous study of Nonkukhetkhong (2013) about the errors made by English major students in their English essays that the most frequent errors were general grammatical errors (47.41%), which contained similar details to the morphological errors in the present study. The top three of the most frequently found errors in the present study were singular/plural errors (30.43%), followed by article errors (21.51%), and preposition errors (5.23%). It meant that the students needed to focus much more on the use of grammatical rules when writing English, especially these top three error sub-types. Regarding the results from analyzing the error sources, the interlanguage errors caused the students who were not competent in English grammar to tend to rely on Thai structures when producing English sentences. Differences between Thai and English structures could confuse the students to make the errors in their English writing. One example of the singular/plural errors was 'Some people have a lot of *reason why they do not like wearing the school *uniform'. The error occurred because the rule of singular/plural forms does not exist in Thai, so the student unmarked the plural endings '-s' after the noun 'reason' and 'uniform' when he/she transferred Thai grammar to English grammar. Moreover, the students might transfer norms of Thai rules into English writings when they attempted to present more complicated ideas or opinions in their written essays. The students would have no idea how to write certain ideas

in English, thus they thought in Thai and translated them to English. However, the direct translations became the deviant sentences. Furthermore, the intralingual and developmental errors also proved their influential roles on the students' errors. The students over-generalized the English structures because some rules were difficult and complex, hence they tended to use their learned English structures to apply with new sentences inappropriately. Besides, the ignorance of rule restrictions was found when the students failed to observe some restrictions of the grammatical rules, so they applied those rules inaccurately. Furthermore, the students tried to use some learnt grammatical structures, but they were able to apply them partly, so the rule applications were still incomplete. Nevertheless, the cause of false concept hypothesized was not found to play any influence on the students' error production.

Recommendations from Grammatical Error Analysis

Recommendations from the Current Study

The students should be aware of grammatical applications when writing English, especially the top three error sub-types: the singular/plural errors, the article errors, and the preposition errors. The English writing teachers and the syllabus designers could create more appropriate lessons and teaching material to remedy their English grammatical problems by using the research results as guidance. The teachers should instruct the students to realize the importance of using correct grammar in English writing. The teachers should provide the appropriate feedback and explanation of the errors made to the students in order to make them recognize and be aware of the common grammatical error commission, especially the top three common errors. Referring to the analysis of the two plausible error sources: the interlanguage errors and the intralingual and developmental errors, the teachers should distinguish different structures between Thai and English grammar and explain them to the students. The teachers may encourage the students to think in English and use plain English when writing sentences in order to prevent any direct translation of Thai to English. Furthermore, the characteristics of the errors which were caused from the difficulties and problems within English itself should be focused and explained more by the teachers. Implications of these exposed findings might raise the students' understanding and awareness to write English sentences more accurately.

Recommendations for Further Studies

In the present study, the researcher only analyzed the plausible source of the errors based on the students' final written products. Therefore, researchers of future studies can get more insight into the sources of error commission, which cause Thai students to make those common grammatical errors by providing feedback of the found errors from the research samples and interviewing them why they make those deviant structures. The present study used the persuasive essays as the researcher instrument. The future studies should employ different essay genres to find and compare any similar or contrastive result. Besides doing the error analysis of English essays, the researchers may analyze the common errors found in the other text types, such as e-mails and memos. Different written genres and text types have their dissimilar nature and patterns. The findings of these future studies will provide various dimensions of problematic areas encountered by Thai L2 learners. Consequently, all benefits derived from the research results can lead the English teachers, the course syllabus designers, and the researchers to be able to improve the Thai students' English writing proficiency.

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Development of an Instructional Model Based on Teach Less, Learn More Concept Using Online-Based Learning Media and Conventional Approach

■ **Yooppares Kaochum**

Abstract: *This research aimed to 1) develop learning management processes based on Teach Less, Learn More concept using online learning and conventional learning methods, 2) compare the learning achievement before and after undergoing the learning management processes based on Teach Less, Learn More concept using online learning and conventional methods, and 3) evaluate the students' satisfaction of the learning management processes based on Teach Less, Learn More concept using online learning and conventional learning methods.*

The sample group of this research was consisted of 40 Mattayomsuksa 4 (M 4) students at Kanaratbamrung Pathumthani School in Pathumthani Province selected using cluster random sampling method. The research instruments were consisted of the lesson plan based on Teach Less, Learn More concept using the online learning and conventional methods, Google classroom Website as a tool for learning based on constructivist theory, a learning achievement test, and a satisfaction evaluation form. The data were analyzed using mean, standard deviation, and t-test.

The research revealed that 1) the learning management processes based on Teach Less, Learn More concept using the online learning and conventional methods encouraged students to create their own knowledge according to constructivist theory, 2) the efficiency of the media based on Teach Less, Learn More concept using the online learning and conventional methods (E_1/E_2) was 80.17/80.25 which was above 80/80 set criterion, 3) the learning achievement after the use of the learning management processes based on Teach Less, Learn More concept using the online learning and conventional methods under the topic of "The Principles of Problem Solving Using Computer" was higher at a significance level of .05, and 4) the students' satisfaction of the learning management processes based on Teach Less, Learn More concept using the online learning and conventional methods was at a high level.

Keywords: Teach Less, Learn More concept, online-based learning media, instructional model

Background and Significance of the Study

Kanaratbamrung Pathumthani School has offered a subject on Information Technology 1, under learning area of Occupations and Technology. The objectives of the subject are that students are able to understand and appreciate the value of information technology. Moreover, they can use information technology to search for information for their study and

problem solving in a work place. From the document review, it is found that students started to be bored with the Information Technology 1 subject and losing their interested in studying the content because they do not understand several topics. Besides, the researcher discovered that computer programming, part of the main unit on computer solution that students have to learn by hands-on practices or learning from the other media. Thus, they can figure out how the program actually works it was found that students are unable to understand it in a short period of time. Teachers have to encourage students to learn more and to solve a problem of having to spend excessive time on the learning process. This problem was supported by Kaabkham (2551, p. 2) which found that " Computer study is quite difficult to understand in class. It has to be reviewed over and over so that the students can successfully understand. The plain teaching and the lack of continual practicing is the main issues". Thus, the best solution is to use the child center approach, allowing them to learn by themselves and utilizing other media along with the practicing.

From that condition, online learning can provides wider knowledge for students to learn everywhere and every time with the Internet access which it responses to the different of students' needs, they can exchange their knowledge with teachers or with their peers by using communicative devices. This is for supporting the child center and lifelong learning method.

Teach Less, Learn More concept is an education method of Singapore which it aims to provide efficient learning process and prepare for students life. The interaction between a teacher and students have been added to increase a chance for students to exchange their opinion and decrease learning by memorizing. The teacher's role has been switched to a facilitator for encouraging students to be succeed at their learning both in class and in a work place. From the issues mentioned above the researcher concludes that Teach Less, Learn More concept is one of the effective teaching ways to resolve the studying of Information Technology 1 subject. Thus, the researcher has brought Teach Less, Learn More concept to the class of M. 4 at Kanaratbamrung Pathumthani School using online learning in cooperate with regular teaching approach. This is to allow students to perform self-learning in order to prepare them for higher education.

Literature Review

To develop the teaching processes by using Teach Less, Learn More concept along with online learning and conventional learning, the researcher had studied information and knowledge involved with this topic including related research as follows:

According to the basic education core curriculum of learning structure of the year 2008, M. 4, High school level (4-6), Learning area of Occupations and Technology has defined that the studying duration throughout the course must be 120 hours in total (3 credits) in which the Information Technology 1 subject is included and high school students need to pass this course. The subject has been reduced in class study duration but its credit is still remains 1.0. Therefore, it has been reduced from 40 hours to 20 hours. The other 20 hours is for leaning outside of the classroom. The researcher then brought online teaching under Teach Less, Learn More concept to support the activity outside of the classroom. The teachers use teach less while the students use learn more strategies but they still can be supported by their teachers as his or her advisor. The students learn more from outside of their class. Teachers changed their roles to lessons planner and activities designer. Preparing the teaching tools, sources, and give students questions that encourages them to build their competence according to the constructivist theory. This procedure can be done by using online learning

as a media along with usual teaching so that students can learn more from online lessons. This arrangement eliminated the boredom of learning. Students can ask teachers for some advice and exchange their opinion between their teachers and classmates. The researcher chose the ADDIE model's learning designing model as a framework in developing the media and learning activities under the Teach Less, Learn More concept and usual teaching for the Information Technology 1 subject. It is not too complicated to handle and it is also well utilized in lessons plan designing today. The ADDIE model consists of 5 steps: 1) Analyzing 2) Designing 3) Developing 4) Implementing, and 5) Evaluating. In an evaluation part, the researcher chose the Kirkpatrick's model because it is a model that used for observing the students' behavior transformation and leading to their learning results not only be evaluated by their testing scores but covering all of their behavior, emotion, and the consequence of learning that effects themselves and the society.

Purposes of the Study

1. To develop the teaching process according to Teach Less, Learn More model using online learning and conventional learning methods and to identify them.
2. To compare students' pretest and posttest achievement before and after studying by using both online and conventional learning methods under the Teach Less, Learn More process.
3. To evaluate students' satisfaction after learning through Teach Less, Learn More (TLLM) concept.

Research Hypotheses

The researcher hypothesized was that the posttest scores of students whom studied through online learning and conventional learning based on Teach Less, Learn More concept is significantly higher than pretest scores.

Practical Application

1. Proved that the Teach Less, Learn More model, online learning, and conventional learning methods is suitable for Information Technology 1 subject of M. 4 students.
2. This Teach Less, Learn More concept can be used as a basement for other subjects.

Research Procedure of the Study

1. The researcher declared the objectives and procedure of online learning and conventional learning methods in Information Technology 1 subject, the principle of issues solving by computer for M. 4 students.
2. The researcher gives a pretest for the sample then records the scores obtained as a pretest score.
3. The researcher explains and demonstrates how to study by using online and conventional learning simultaneously in related subject and indicates its goals and conditions to the students so they can clearly see the overall of learning process. The students must read and do after the learning instruction.
4. Proceed the experiment by using online learning and conventional learning with Information Technology 1 subject : The principle of problem solving issues by computer for M. 4 students. Time used in this subject is 8 hours per unit. The students also have to do some exercises for 3 lessons, each exercise has 3 sections and each section contains 10 points.

5. After completed lessons using online learning and conventional learning with Information Technology 1 subject: The principle of problem solving issues by computer for M. 4 students, the researcher has the students done the related achievement test then record the result as the posttest score and gives the students the post learning satisfaction questionnaire.

6. Check the posttest result of the sample : correct answer = 1 point, incorrect answer = 0 point after that test, the obtained result with statistical measurement to prove the hypotheses.

7. Analyze the online learning and conventional learning for Information Technology 1 subject: The principle of problem solving issues by computer for M. 4 students satisfaction questionnaire result by using statistic method to test the hypotheses.

Data Analysis

1. Analyzed data to find the efficiency of the teaching by using Teach Less, Learn More model : the online learning and conventional learning, according to 80/80 standard using E_1/E_2 and ($\overline{X}$)

2. Analyzed the comparison of the different between pretest and posttest by t-test using Dependent format.

3. Analyzed the satisfaction by using ($\overline{X}$), S.D, and Alpha coefficient learning

Research Results

1. It was found that the students who learned through the online and conventional learning for Information Technology 1 subject can build their competence according to the constructivist theory and they can learn every time and everywhere with the Internet access.

2. Online media that the researcher has developed, the Teach Less, Learn More model has the overall efficiency at 80.17/80.25 which is higher than the set criteria of: 80/80. The units have the procedure efficiency (E_1) of: 88.25, 80.00 and 84.25 respectively and the result efficiency (E_2) equivalent to 80.25.

3. The posttest scores of the online in cooperating with normal learning for Information Technology 1 subject of M. 4 is statistical significantly higher than the pretest scores at the .05 level

4. The satisfaction of M. 4 students who learned through Teach Less, Learn More approach is at excellent level.

Discussion

1.The result of Teach Less, Learn More: the online and conventional learning for Information Technology I subject: The principle of problem solving issues by computer for M. 4 students using Self-regulation and Self-directed indicated that the students can learn how to solve the issues by computer through self-online learning. They can search for the source of information, knowledge, know how to obtain them. This indicated that the overall students achievement have been improved in accordance with the research of Panomrit, Chareansuk and Ananchaipattana (2011) who had studied the way of self-controlling of nursing students who have different learning potential. The results of this research indicated that the self-controlled learning in difference aspects and the statistic significantly difference by .01. Short (2015) who had studied the difference between the position and welfare organizing and self-controlling functions in order to inspect the working and self-controlling of the executives; for example, how do they promote employees position and provide

welfare. The results indicated that the self-consciousness and consideration are the most related to their position and welfare.

2. The online media the researcher has developed after the Teach Less, Learn More model has the overall efficiency at 80.17/80.25 which is higher than the standard: 80/80 the first goal. This is because the online media using in this research was created systematically using the Teach Less, Learn More model. To create this tool, the researcher had studied the related online teaching documents, media and researches then constructed the online media teaching together with conventional teaching. After that the researcher brought the completed version of the media to the thesis advisor board to had it examined and improved after their advices. The researcher also took the media, the test and the online teaching questionnaire to the expert in order to examine the content validity. To do this, all of the tools were tested with the sample: the small group of the students to prove its content validate and the practicability of activities and the time using in this learning process. After realizing the mistakes occurred during the inspection, the researcher finally improved the tools. This is why the online and conventional teaching media developed under Teach Less, Learn More concept about the principle of problem solving issues by computer for M. 4, the researcher has created is practically efficiency. This is according to Noothong (2012, p.58) who created the online computer teaching on the Internet for Film and Digital media production 1, Bachelor degree students of the film and digital media field. The research indicated that this created media has 86.12/85.75 of its efficiency which is matched for the standard and it is according to Suttisakda (2014, p.61) who did the research on the computer learning achievement comparison on the Web. Creating by Mattayom 6, the students studied with teaching assistant computer along with conventional teaching. The result average scores had been statistic significantly risen more than the pre learning average scores by .01.

Ronaldo (2012, p. 257) studied the students' attitude towards the teaching efficiency of the Computer Assisted Instruction (CAI) in Chemistry subject. The data of this teaching media used for a control group and an experiment groups. The result was analyzed and it indicated that the experiment group had more learning efficiency than the other group once they were taught by CAI. The students also had a positive attitude towards. Moreover, the learning activities arranged by teaching design, the new science related to the psychological theory, communication, education, and other sciences to help the students learn more. The aim of this teaching design is to develop the learning ability of the students therefore the researcher selected the ADDIE Model. The model for designing the teaching system to be used with the system approach in designing and developing the computer learning. To do this, the researcher has made the online teaching media after the Teach Less, Learn More concept combined with ADDIE model in every step of making the media, from the analyzing to the evaluating section, which is accorded with Tantirangsi (2011) who had studied the developing of online computer teaching on the Internet using ADDIE Model for teaching in Graphic Programming subject. The results can be summarized with 3 parts of its elements: 1) the quality of the overall lessons evaluation result done by the experts is good, 2) the overall of students' satisfaction result is good, and 3) the efficiency analyzing of the CAI has done by giving students during the lesson test and the achievement test. The results of these tests are 81.20/87.17 which is higher than the standard and it accords with the research of Ozdilek (2009) who studied the importance of ordering the teaching design using ADDIE model. The result of the research indicated that some procedures related to learning is interesting than focusing on the person.

3. The comparison of learning achievement result after the learners had been taught by the online media and the conventional teaching by using Teach Less, Learn More concept in the principle of problem solving by computer subject for M. 4. The achievement result is significantly risen by .05 calculated with statistic, this result is along well with the 1st hypotheses: the learning achievement in Information Technology I subject in which the students have completed the lesson by studying through the online learning and the conventional teaching accord with Teach Less, Learn More concept and their scores are even higher than the pre-studying. This is because online learning allows students to study every time and everywhere. This elevates their achievement test scores and it also accords with Zheng (2015) research who had studied the one time online testing by local method. He used the Local Online Learning (LOL) to help students avoid the aggressive behavior. This is accorded with the research of Leelaaekniti (2013) who had studied the comparison of the learning achievement of the communicating data system on social computer for M. 4. He had the students studied on the online learning and in the conventional class. The results indicated that the certain online lesson has 94.52 / 90.48 efficiency and the learning achievement is statistical significantly different by .05. The students' achievement result is higher than the normal class one and their satisfaction on the online lessons is excellent as the showing average is 4.23.

The online lesson arranging with the normal lesson according with Teach Less, Learn More, granted the better learning to the learners. This accords with Tantiwiwat (2014) who had studied the arranging of teaching circuit analyzing in the Mechatronic field, Education and Technology Industry Faculty. He adapted the concept of Teach Less, Learn More to his research and the result done by measuring the learning behavior both outside and inside of the classroom of the certain students in the 2nd semester of 2014 is good equivalent to the research of Kachachai (2011) who studied the computer multimedia lesson developing after the Constructivist concept in Science: the organ systems in our body topic for Mattayom 6, WatUtapao school. The research result indicates that the efficiency of the certain lesson research is 82.00/81.00 which is higher than the standard: 80/80. The achievement result is higher than the pre learning by 42.67 which is accordance with the related research done by Ahmad (2014) who had studied the relation of learning environment on the Constructivist way and the facilities using the Science class. The research result indicates that the majority of the students accept the truth in CLES except in the Shared control level which is the level that did not allow them to share information. This is controlled by the teacher who defined the certain environment. The t-test was shown that the students tended to like the Constructivist learning environment than the real learning environment. ($p < 0.05$)

4. The satisfaction of M. 4 students who have been taught through the online learning and the conventional learning after the Teach Less, Learn More concept in the principle of problem solving issues by computer topic for M. 4 is excellent. This is because of the certain online lesson which was made after Teach Less, Learn More by the researcher. It is accordance with the research done by Panomrit, Chareansuk, and Anantachaipattana (2011) who had studied the learning by using self-controlling of the nursing student who have difference level of perceiving their ability. The research results are: 1) the students who have the difference ability perceiving have the self-controlled learning both in overall and each aspects differently, this can be statistically measured by .01 significantly, 2) the nursing students who have difference sources of budget have got the self-controlled learning in each aspects and overall aspect differently, this can be measured by .01 in significant statistic, 3) the nursing students who have got the different achievement results also have the different

self-controlled strategic with by .01 significant statistical measuring, and 4) the students who do not react to the self-controlling done by combining the ability perceiving variant, the budget source and the learning achievement.

All of this research results were evaluated by continuously measuring and processing to cover all the relation activity which is accordance with Wongba and Chongchaiharn (2012), the ones who had evaluated the result of CHAMPION training program by adapting the Kirkpatrick guidance. The research result indicates that most of trainees from the official organizations are females, holding Bachelor degree as their highest education level and their average age is 41.53, the standard deviation is 8.31. The level 1 evaluating indicates that most of these trainees are satisfied with the program, the experts, the techniques and the supporting factors are graded from good to excellent. The level 2 evaluating shows the average scores before receiving the training is 15.71, the standard deviation is 2.57 and the average scores after receiving the training is 25.02, the standard deviation is 1.79. The difference between the pre and post training is equivalent to 9.31. The trainees understandability both pre and post training is differently statistically significant at .05. This is consistent to the research done by Hu (2015, p. 152) who had studied the evaluation of simulation training for organizing the commercial aviation with 3 dimension and Kirkpatrick models. The simulated training was used for training the crew especially on the rooftop of the aircraft has the complicated and risk environment. The qualitative evaluation of the quality simulated training is important for it makes the practical operating on the aircraft happen. The result of the study indicates that receiving the simulated training is better than one with text books. The results found 26.80% of the trainees who have been tested for 3 rounds can be improved. This is proved the efficiency of this kind of training.

Suggestions

1. General suggestion

1.1 The research result indicates that the comparison of the learning achievement of the students learned by the online learning and the conventional learning using Teach Less, Learn More procedure on the topic of the principle of problem solving issues by the computer for M. 4, grants the involving students the higher scores before learning by this method. Therefore, the researcher suggests teachers from every department to take this technic into the consideration for further teaching.

1.2 In making this online teaching media to be used as much effective as possible for the learners, the teachers should plan the lessons, the activities, the tool and the evaluation to be as the guide for the defining objectives.

1.3 To take the online teaching media to the class, the teachers should study its content and its procedure precisely for the most effective way of using in the real field.

1.4 Before take it to students, teachers should clearly indicate the instruction and the procedure of this online teaching media for the students are able to use it correctly without facing the problem.

1.5 To use this online teaching media, the teachers should teach them well about the morality, ethics, responsibility, and honesty due to the internet searching involving in this online teaching media. If the students lack of those then this method is useless.

1.6 To take this online teaching media to other students, the teachers should appropriately adjust the time using on the activity after the students' ability for the better efficiency of the learning.

2. The suggestion for further researches.

2.1 The learning process should be researched by using technics or other kind of teachings to obtain the different invention and to completely develop the learners' ability.

2.2 There should be these online teaching media research in every departments, levels and classes because it can help boost the efficiency of learning activities.

2.3 The other sample students should be tested by it in order to see if the obtained results are same or difference.

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A Study of Thai Teachers' Perceptions Toward the Implementation of Communicative Language Teaching of English

■ **Yunghwan Kwon**

Abstract : *This study explored the perceptions of Thai teachers toward the implementation of Communicative Language Teaching in their English classrooms. Despite the Thai government promoting CLT in English classrooms since the 1990s, Thai teachers still struggle to bring their students to communicative competency. This study interviewed 6 in-service teachers who currently utilizing CLT about their experiences in order to gather insight into the difficulties that many Thai teachers were facing in utilizing this approach to teaching English. These interviews also intended to provide a better understanding of EFL teaching methodology in the Thai classroom and to emphasize the need for EFL teachers in Korea to build students' abilities to communicate in English. The findings of the study were that the subjects found it difficult to use English textbooks to promote communicative competence as the textbooks were not selected with the purpose of setting CLT objectives. Also, teachers often find it difficult to utilize communication oriented activities as they feel burdened to prepare their students, through the teaching linguistic elements of English, for the National Entrance Examination. Furthermore, teachers often feel burdened by large class sizes and do not feel adequately trained to implement Communicative Language Teaching successfully.*

Keywords: Communicative language teaching, communicative competence, teachers' perceptions

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Introduction

This study explores the perceptions of Thai teachers toward the implementation of Communicative Language Teaching. This is a qualitative study meant to focus on the experiences of Thai teachers using CLT. This study looks to gain insight into how CLT is implemented and the difficulties that Thai teachers face when applying CLT in their English classrooms.

From the perspective of facilitating communicative competence in language learning, rather than depending on the audio-lingual method which emphasizes memory and repetition drills, language teachers and researchers look to Communicative Language Teaching as a different way of language learning/teaching. Language is ultimately regarded as communication (Nunan, 1988; Richards & Rodgers, 1986). From this point, the aim of language teaching/learning should be communicative-oriented in order to develop the learner's communicative competence (Wilkins, 1972). Brumfit (1980) also posits that what we are learning is not just stimulus-response relationships, but rather a generative system which helps us negotiate meaning.

Many Asian countries have been employing CLT for decades. The CLT teaching method has been accommodated and adjusted to the language teaching and learning of real situations to promote students' communicative abilities in English. In the same vein, since the 1990s, the Thai government has promoted CLT in English classrooms and focused on learner-centered instruction and the communicative approach. Though CLT has now been a part of English in Thailand for a while, like other Asian countries, there are still many problems in its implementation, namely that it is a far cry from traditional approaches to learning English and that the educational system, teachers, and students are still not accustomed to learning English in this manner.

This study is important for several reasons. First, there is a dearth of research on how Communicative Language Teaching in EFL classrooms in Asia can lead students to gain communicative competency. There has been a shift of emphasis from teaching linguistic elements to teaching appropriate language use in English language teaching (Allwright & Bailey, 1991; Cohen & Olshtain, 1993). Therefore, Teachers need to provide opportunities for students to practice and use these communication strategies in their teaching (Tarone, 1984).

Despite attempts to help students develop communicative skills, there is still a need for more empirical support to explain how teachers lead students to develop communicative competence in EFL classrooms. To do this, this study attempts to gain a better understanding of teachers' perceptions of communicative learning and teaching through a series of interviews with Thai teachers that are currently utilizing CLT in their classrooms. The questions asked in the interviews were designed to determine: a) whether teachers have a good understanding of how to properly implement Communicative Language Teaching, b) whether they believe Communicative Language Teaching is effective in bringing about communicative competency in English in their students, and c) which teaching model would be best suited for both students and teachers in Asia to meet their unique challenges when employing Communicative Language Teaching.

This study aims to provide a better understanding of EFL teaching methodology in the Thai classroom in order to provide insight for teachers seeking to provide their students with chances to become better communicators in English. This study will look to attain deeper awareness of this need.

Furthermore, this study will look to further emphasize the need for EFL teachers in other English language learning environments to build students' abilities to communicate in English rather than just putting emphasis on the learning of grammar rules and how to translate. This study hopes to offer opportunities to gain deeper knowledge of Communicative Language Teaching that can be put to practical use by other Asian EFL teachers and learners.

Literature Review

The current trend of second/foreign language teaching emphasizes the development of communicative competence rather than the acquisition of discreet linguistic elements. For this reason, many researchers (Bachman, 1990; Breen and Candlin, 1980; Brown and Yule, 1983; Brumfit, 1980; Canale and Swain, 1980 Candlin, 1976; Hymes, 1972 & 1992; Savignon, 1972 & 1983; Rivers, 1981, 1987; Wilkins, 1972) have concentrated on how ESL students develop communicative competence. These researchers all stress that second/foreign language students are required to practice in order to develop their communicative ability so that they can express themselves appropriately in the situations they come across in the real world.

Candline (1976) notes that we need to understand meaning rather than just grammatical structure. Brown and Yule (1983) also support the idea that the present teaching trend has moved away from the study of form to the study of the meaning of language. In order to have a deeper understanding of communicative language teaching, Nunan (1988) points out that we need to see communicative ability "as being developed through activities which actually simulate target performance" (p. 26). In their lessons, teachers, therefore, are encouraged to select "activities which require learners to do in class what they will have to do outside class," rather than selecting activities that focus on "language drills or controlled practice leading towards communicative language use" (p. 26). Finally, in teaching a language, we are required to understand what impact communication has not only to the form the target language requires. So, researchers and teachers need to pay attention to a shift in language learning and teaching and to turn our attention and interest to more communicative-oriented lessons.

Hence, the research suggests that the success of language learning may rely on how much and how well this communicative-oriented approach in second or foreign language teaching is implemented. For this approach, the student needs to have direct access to members of the target language and culture, as well as the opportunity to experience them in context, beyond textbooks. In other words, students need to interact with the people of the target culture in an authentic setting where meaning is connected to language practice (Rivers, 1981).

Learning a language means more than memorizing vocabulary and understanding the rules of grammar. The real objective is to learn to communicate with speakers of the language. Breen and Candlin (1980) noted that, "learning to communicate involves acquiring knowledge of the conventions which govern communicative performance" (p. 91). Teachers can help their students to achieve communicative competence by adopting methods which increase the linguistic, social, and interaction knowledge and skills that they must have to interact in the second language.

One of the ways to provide an opportunity for the student to become communicatively competent is for the teacher to provide an authentic environment that encourages this outcome. To do this, the teacher can introduce technology tools, such as TV, Film, or the Internet, into student learning. These tools can provide a variety of contextual inputs that traditional textbooks cannot (Cummings, 1994), because students are exposed to a variety of unpredictable language situations, which are more characteristic of authentic language environments. This is in contrast to the teacher simply providing all of the language input for discussion. In other words, discussions based on this type of native language interaction will yield two-way interactions between students and teacher and among students. These

discussions can go in a countless number of directions since they are based upon student perceptions of a language event that everyone has viewed at the same time.

However, the success of employing higher technology in the classroom may depend on how the teacher adapts the material to meet student needs to provide meaningful input. As Warshauer (1996) states, although the hypermedia made a significant impact on language teaching which has been largely beneficial, the problems reside in the availability of quality programs, the amount of teacher training in the use of technology, and the degree of creativity needed to make teaching materials for the classroom.

With the implementation of technology into many areas of life, it is usually the younger or more adventurous teachers who will strive to integrate the opportunities that these new tools can offer in terms of language interaction. However, since students are being exposed to and stimulated by new learning environments, like the Internet, effort must be made to utilize the new generation of authentic learning interactions that these technologies offer. The technology has the potential to attract and keep the attention of younger learners making them feel that language opportunities are not just interactive but also relevant. Being sensitive to student perceptions in the area of technology will become a necessary characteristic of a learner-centered curriculum which provides opportunities for communicative competence.

In addition to employing technology in teaching to develop students' communicative ability, according to Savignon (1972), the success of the communicative-oriented lessons depends on:

> the individual's willingness to express himself in the foreign language, on his resourcefulness in making use of the lexical and syntactical items which he has at his command, and on his knowledge of the paralinguistic and kinetic features of the language-intonation, facial expression, gestures, and so on-which contribute to communication. (p. 153)

From this point of view, Savignon (1983) demonstrates her approach of the feasibility of communicative competence as a pedagogical concept. She explains that learning a language is making meaning of the language. Accordingly, the role of the teacher can be how he/she provides opportunities for meaningful input to increase the student communicative ability in the target language (Krashen & Terrell, 1983).

As teachers of English as a second or foreign language, it is challenging to combine the principles of communicative competence while simultaneously letting students determine aspects of what is implemented in the classroom. The teacher's part is to make purposeful and meaningful communication contexts available to students in order to provide them with systematic opportunities for language competence. Brumfit (1980) notes, a methodology for communicative competence that takes into consideration the students' part in this process is "one that allows the learner to structure all the learning, without losing the advantages of the greater experience of language learning situations which good teachers bring to the classroom" (p. 9). Hence, the teacher needs to use methods to help his/her students achieve communicative competence while at the same time allowing them to structure their own language interaction. To increase a learner's chances of structuring their own learning in authentic language settings, Canale and Swain (1980) support the idea of providing opportunities for second language learners to have "meaningful communicative interaction with highly competent speakers of the [target] language" (p. 27). In other words, it is vital

that the second language learner have the opportunity to "respond to genuine communicative needs in realistic second language situations" (p. 27).

Based upon this understanding of the principles of communicative competence and the students' role in creating truly communicative opportunities in the ESL classroom , Breen and Candlin (1980) note, communicative curricular are the foundation of providing learning which is "open and subject to ongoing developments in theory, research, and practical classroom experience" (p. 107). In addition, they argue that communicative curricular are needed to provide the opportunities for students to attain communicative competency:

> Communicative curricular are essentially the means of capturing variability. Variability will exist in selected purposes, methods, and evaluation procedures, but variability must also be seen as inherent in human communication in the ways it is variously achieved by different learners and teachers. The classroom-its social-psychological reality, its procedures and activities-is potentially a communicative environment where the effort to pull together such variability is undertaken (p. 107).

Nunan (1988) also supports this idea that students can achieve communicative competency when a learner-centered curriculum, whose reality of "not what educational planners say ought to happen, but what teachers and learners actually do, " is employed (p. 1). This curriculum stimulated by communicative language teaching results from a collaborative effort involving the "negotiation and consultation between teachers and learners" (p. 36). By doing this, the teacher can analyze what students specifically need and are interested in and implement this into curriculum planning. In consequence, Nunan (1998) perceives the development of communicative curriculum as being "largely a matter of effective teacher development" (p. 14). In other words, in order to develop communicative-oriented teaching successfully, teachers themselves need to understand how to innovate a curriculum to meet their own unique teaching context (Li, 1998). Rather than looking for the best method for the communicative curriculum, teachers need to find the "most appropriate approach, design of materials, or set of procedures in a particular case" (Rivers, 1987, p. 6). Two areas that Nunan distinguishes this type of curriculum development from traditional course development are in planning content and assessment and evaluation.

In regard to the second area that Nunan addresses, assessment and evaluation, it is argued that students should become involved with teachers in their own progress assessment, as well as participate in the evaluation of other elements of the course, such as "materials, activities and learning arrangements" (Nunan, 1988, p. 134). This participation, the author maintains, makes students more active in, as well as more critically self-aware of the learning process.

Methodology: Interviews

I began the interviews with a brief introduction explaining the purpose of the interviews. Holstein and Gubrium (1995) assert that "interviewing is a project for producing meaning" (p. 14). Mishler (1991) also claims that interviews are a useful tool that produces "meaningful and promising findings" (p. 76). The narratives show how "individuals attempt to order, organize, and express meaning" (p. 106). I asked 6 in-service teachers currently utilizing CLT, hereafter called Teacher A through F, to tell me a little bit about their teaching experiences. These are descriptive questions (Rubin and Rubin, 1995; Spradley, 1979) meant

to open up dialogue between the interviewee and interviewer. Spradley (1979) calls these kinds of descriptive questions *grand tour questions*.

First, in order to identify Thai teachers' problems in the implementation process, I asked what particular problems they encounter in their classrooms when they employ Communicative Language Teaching. I also asked what possible solutions could be for the problems.

Second, after asking and analyzing answers to the general questions, I asked more specific questions. These were more structural questions by which I, as the researcher, could gain a deeper knowledge about the interviewees' main points (Spradley, 1979, p. 60). The follow-up questions and answers were about the syllabus, textbook, and classroom management. These questions are called *mini tour questions* (Spradley, 1979).

While collecting the data, in an attempt to eliminate any possible ambiguities or misunderstandings, I interviewed some participants for further clarification on certain points after analyzing their narratives.

Findings and Discussion:

Teachers' Perceptions towards the Use of English Textbook in Thai Classrooms

Through the interviews with the six teachers, I found that each teacher appeared to have difficulties in providing opportunities for students to communicate using their English textbooks and that they often feel the need to adjust the teaching materials to meet students' needs, level, and interests. Teacher E states:

> "I think most teachers don't know what the aims and mission statement of their schools are and, therefore, don't know how to design their syllabus accordingly. If the aim of the school is to produce communicative-competent learners, many teachers don't know what CLT is, how to apply it, and how to measure their students' development."

Hence, teachers should be a part of the textbook selection process in order to help students practice real world communication. They need also consider whether or not the textbook provides clear contexts that meet the school's aims and program goals.

Teacher F proposes a possible solution for choosing suitable textbooks in Thai CLT classrooms:

The best way to choose a textbook is to determine whether or not that book is going to help teachers meet the school aims and program goals. If our aim is CLT, we should try to determine if the activities in the book give the students opportunities for real world communicative practice. Does the book provide clear contexts? Does it have activities in which the students get to speak and share their writing with others?

In this way, teachers will be able to lead the classroom in a student-centered communicative way that reduces emphasis on grammar and accuracy and focuses more on communication and fluency.

Teaching Problems

First, though many teachers believe that the implementation of CLT principles would improve Thai students' low proficiency in English, there is a lack of confident Thai teachers who can provide authentic environments utilizing the CLT approach. Teachers who teach English in Thailand are mostly nonnative speakers who often have, themselves,

low proficiency in spoken English. Thai teachers generally use Thai as the medium of instruction in their classrooms and are, therefore, not capable of providing meaningful input and interaction due to a lack of language confidence. For this reason, the Thai government needs more competent English language teachers in order to help students develop language competency.

Teacher A states:

> "It seems to me that qualified and successful English teachers should have qualifications as follows: good teacher characteristics, confidence, and self-efficacy. Moreover, training teachers to effectively use CLT activities is also necessary for solving this problem. Highly trained and knowledgeable teachers are necessary in order to create a successful classroom environment."

It is essential that teachers using CLT are able to provide language input in English for students to interact within the classroom. They should be able to create a variety of content and contexts to support learning in promoting communicative ability.

Second, teaching involves the ability to create meaningful activities which will motivate students to speak. Teachers need to provide activities in order to promote the students to be communicatively competent. Teacher B explains:

> "Creating activities and tasks related to real communication, teachers should create activities that help students practice communicative competence that simulates everyday life as much as possible. Teachers will play the key role in developing their students' abilities and providing their students routes to language learning. Successful language learning involves the use of effective learning and communication strategies. The role of the teacher in the language classroom is that of a facilitator who creates a classroom climate conducive to language learning and provides opportunities for students to use and practice the language."

Third, teachers need to provide authentic materials to encourage speaking in the classroom, and to be aware of what materials appeal to ESL/EFL students. Accordingly, teachers should provide more opportunities for students to speak by employing meaningful activities that encourage suitable communicative techniques. Teacher C stresses the importance of practicing language in real world situations:

> "The teacher must design courses which are able to encourage the development of communicative oriented teaching materials so students will have opportunities to practice using authentic materials on topics of their interest. Using authentic teaching media, the students are able to see the real world and imagine the teaching aims clearly. Additionally, choosing suitable teaching materials will have a positive effect on student motivation."

Classroom Management

Characteristics of good language teachers are that they use a variety of classroom management skills which facilitate language learning. However, Thai teachers seem to have difficulties in managing large class sizes. Teacher E comments on one issue related to this point:

> "A large class size makes it more difficult for teachers to employ CLT because it is harder to keep the students' attention and nearly impossible to monitor students' production. Teachers then revert to lecture/grammar/vocab lessons because they are easier to deliver."

As a result, teachers are facing difficulty in preparing activities and materials to suit different student needs. Additionally, classroom management issues characteristic of large classes often lead to time spent off task, further shortening the already limited contact time. Teacher D comments on the difficulty employing suitable activities in CLT classes due to large class sizes:

> "A common problem for students is caused by the fact that class sizes are often too large to use CLT. Having 12 students in CLT classes would be suitable for many activities. If student numbers cannot be lowered, it becomes necessary to have an assistant teacher in CLT classes. Small group interaction could potentially provide students with adequate opportunities to become communicatively competent." Teacher C explains why small group work is important in combatting many issues associated with large classes for promoting communicative competency in CLT classes: "In my case, I cannot allow for students to practice their speaking skills in class and I cannot check students' writing carefully because of the large number of students. Furthermore, students pay less attention in large classes. They make loud noises and spend a lot of time talking off topic with their classmates. As a result, students spend less time learning. In my opinion, small group work would make learning in large classes more efficient."

Hence, large class sizes may be a factor that has been preventing the successful utilization in Thai classrooms.

National Entrance Examinations

Thai teachers and students are under a heavy burden to get high scores on English examinations. These examinations tend to place more emphasis on knowing linguistic elements of the English language which do not always align with the communicative goals that CLT encourages students to attain. Teacher C describes his teaching environment:

> One of the biggest hindrances to implementing CLT is the national entrance exam. Thai teachers do a lot of "teaching to the test" throughout Thailand. They still teach grammar/vocabulary lessons which are not a main focus in the CLT approach.

Despite this, students need to do well on English exams in order to enter university. To meet student and test needs, teachers have to strictly follow the schedule prescribed by the district authority. These requirements place a lot of strain on teachers hoping to provide students with language activities with communication oriented language objectives.

Teacher D suggests that the Thai government provide more financial assistance for Thai English education to be more successful by adopting suitable CLT evaluation standards. Likewise, teacher A insists:

> "Although Thai students are taking exams that contain CLT oriented elements like listening and reading comprehension, the cost for

evaluation is not cheap. Hopefully, the Thai government will maintain a budget to continue this policy."

Teacher Training

Last, if we want teachers to learn how to create and implement CLT lessons, teacher training in CLT methodology is necessary and should be ongoing. Teacher training can be very effective when implemented with specific learner objectives and outcomes in mind. Specific guidelines on classroom teaching are needed so that teachers can implement new approaches in teaching English. Teachers often feel that they do not receive adequate training and are often left feeling unsupported.

Teacher B tells of the importance of teacher training for the implementation of the CLT approach in the Thai language learning environment:

> "Teachers should receive training in implementing CLT activities and teaching methodology. The activities should be authentic and should resemble students' circumstances and environment. Teachers should be trained to use a variety of teaching techniques in order to make their lessons interesting. With more teaching techniques at their disposal, teachers will be better equipped to choose teaching activities suitable for learners."

Teacher E also supports the idea of employing organized ongoing teacher training, which could provide effective teaching practices in CLT classrooms?

> "Teacher training is always a good thing. Teacher training can be very effective if organized with a very specific learner objective and outcome in mind. If we want teachers to learn how to create and implement CLT lessons, training in CLT methodology is necessary and should be ongoing. Teachers should also be given opportunities to create their own CLT activities with their peers and to share them with each other during the training."

Teacher A insists that useful training needs to be implemented in order for CLT to be effectively utilized in the classroom:

> "Teachers should also be trained on designing CLT activities for the four major skills of speaking, listening, reading, and writing. Teachers should be able to assess the training and their assessments should be considered as ways to improve future training sessions. Finally, training should follow the teachers from the workshops and seminars into their individual classrooms."

Teacher C strongly believes that ongoing teacher training programs can effectively assist qualified teachers in creating productive environments for student learning:

> "Qualified teachers are able to create the best environments for learning. It would be best to give assistance by organizing training sessions, seminars, and conferences for teachers at all levels of ability and experience. In addition, teachers should be offered continuous training by providing seminars, workshops, and conferences every year."

Teacher F agrees that specific professional training programs, including workshops and seminars, will help teachers broach new ways of teaching with confidence:

> "Certainly, effective workshops and seminars are always helpful in giving teachers ideas for employing and reflecting upon new methods. Just like the students, teachers need support when trying out new things. When people are supported in their efforts to learn and apply new ideas, they are more apt to be successful and will gain much needed confidence. Workshops and development support can be provided by anyone who is knowledgeable and well-practiced".

Finally, successful teachers need to develop themselves as language teachers. They can attend teacher training courses to enhance their teaching competencies in EFL situations. They can also join workshops that promote practical teaching skills and help to find possible problems and solutions they might face in the classroom.

Conclusion

In order to provide opportunities for students to learn to communicate in English productively, Second/Foreign language teachers need to think about how we, as language teachers, can teach our second language learners efficiently. While the Thai government has attempted to bring emphasis to communicative ability in its education system, many teachers still struggle to lead their students communicative competence. This is a qualitative study which aims to gain a better understanding of teachers' perceptions of why the Thai education system and its teachers are falling short of many of its English language educational goals, namely to bring their students to communicative competence.

Through interviews with 6 in-service teachers currently utilizing CLT, this study attempts to gather insight into the challenges that many Thai teachers are facing in utilizing this approach to teaching English. The interviews with each of the teachers, one at a time, included a short introduction explaining the purpose of the study, general descriptive questioning and a period of specific questioning in order to delve more deeply into the teachers' experiences and struggles implementing CLT in their classrooms. Finally, after analyzing interviewees' narratives, I interviewed some participants for further clarification of their points.

The interviews yielded three important findings. First, students need exposure to language materials and input that are conducive to CLT and that fosters communicative competence. Class textbooks should be carefully chosen in accordance with the school's aims and curriculum goals. Namely, textbooks need to be analyzed for their capacity to provide real-world language contexts and activities that align with the goals of CLT. Also, teachers, as a model for language usage in the classroom, need to provide students with quality language input. Teachers should provide quality authentic materials and activities that simulate authentic language contexts for language usage. Specifically, teachers must provide effective modeling of communicative techniques in use and allot time for students to practice those techniques.

Second, the teacher should create opportunities for students to gain communicative competence by employing group work for communicative activities. Sitting students in small groups is an effective way to combat large class sizes. This seating arrangement has the potential to provide students with opportunities to communicatively interact with one other. Because of large class sizes, Asian students including those from Thailand and other English

language learning environments do not have many opportunities for suitable communication with their teachers and peers. By sitting students in small groups, students are given the opportunity to perform communicative activities to achieve a more effective and purposeful communication of meaning. If teachers use more meaningful activities utilizing small groups, students will be more deeply involved in the communicative activities thus providing students adequate opportunity to become communicatively competent.

Last, teacher educators need to provide teachers in development programs with opportunities to process how they get students to communicate in English. To do this, in order to avoid prescriptions about what and how to teach, teachers can explore their own teaching (self-observation) and the teaching of others (observation) in order to gain awareness of their own teaching (Gebhard, 1996). Teachers need to pay attention to their teaching, monitor it, and analyze it. In order to work on the development of our teaching, we, as language teachers, should not remain satisfied with our present situation. We need to grow and learn constantly to get more knowledge for our teaching. As Mayer (1990) notes, most change happens in a "more gradual and incremental" (p. 4) way, and it is a "permanent and a lifelong process" (p. 243). Ultimately, we should explore alternatives in our teaching rather than judge our teaching practices (Fanselow, 1992, p. 2). This ongoing development helps us to liberate ourselves "from the prescriptive confining voices of those who believe they know the best ways to teach" (Gebhard, 1998, p. 8). Accordingly, quality education can be provided by teachers who are aware of the significance of effective teaching and pursue more suitable ways of teaching for the enhancement of student learning.

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