

**Title: The Effectiveness of Bilingual Education in the Basic Education Curriculum: English for Integrated Studies (EIS) Model**

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### **Executive Summary**

English for Integrated Studies (EIS) as an innovation for bilingual curriculum development and practice aims to improve the effectiveness of curriculum and instruction in basic education based on the national education curriculum of the Ministry of Education. It increases educational opportunity to Thai people with low incomes. Moreover, the EIS curriculum brings about the balance and sustainability of resolution.

The results of the in-depth study on a case study of EIS instructional management show that the key components of EIS in creating effectiveness of the curriculum development in basic education are:

1. The characteristics of EIS syllabus that integrates the OK model
2. Mathematical Methodology, and
3. SSF English Model in the teaching-learning process in any subjects' content through a structured on-the-job training of the Non-English Speaking Teacher (NEST).

Strong support from school administrators in monitoring and coaching, especially for leaders who utilize their academic management roles as encouragers, mentors, facilitators, supervisors and coaches showing their eagerness, understanding, attention, and encouragement to the team-workers, demonstrating leadership in directing, informing, and pursuing the results will stimulate teachers to be enthusiastic, attentive and active to use English as a communicative medium in their integrated studies or in other subjects using English as a medium of instruction. Moreover, it found that the EIS project reinforced the competency and potential of Thai teachers who had never used English as a medium for teaching Mathematics, Science, Computer and other subjects both in primary and secondary levels. Their instructional capability is not significantly different from that of the foreign teachers teaching in the bilingual schools in the English Program (EP) in accordance with the curriculum of Ministry of Education.

In addition, from 2005 to 2008 the result from the EIS project development of SPSS found that the learners' learning outcomes in English, Mathematics, and Sciences were not different from those of the students in many renowned schools or those of the students in the other bilingual schools with higher readiness.

From analyzing and synthesizing the key components of the EIS approach compared with SEP's theory, especially the concept of Reasonableness, Moderation and Self-Immunity, two conditions are required for the philosophy to work; knowledge and virtues, which create balance and sustainability on improving the effectiveness of Bilingual Education Program in the context of Thai educational culture.

## Research Background:

The former Thai Prime Minister General Surayuth Julanon gave a speech on 18<sup>th</sup> January 2007, "...youths need to learn and realize the importance of English language to understand other nations..." (Rangubtuk, 2007: 6). English language has been widely accepted as the medium of information exchange and communication (Cenoz&Jessner, 2000). Even though Thailand's new basic education curriculum in the year 2001 aimed at solving the problems of teaching-learning English in basic education in accordance with the education curriculum of the Ministry of Education in 1978 (1990 Revision). The present curriculum is still unable to make Thai people capable of using English for communication and searching in different fields of knowledge (Ministry of Education, 2001). The curriculum management is expanded to schools to meet the locals' needs and problems. After six years of using the education curriculum in schools, students' learning outcome records in English from the National Institute of Educational Testing Service (NIETS, 2008) and the Bureau of Educational Testing under the Office of the Basic Education Commission (OBEC, 2008) found the national average percentage of the students' achievement of English in the levels of Primary 6, Secondary 3 and Secondary 6 from academic year 2003 to 2007 as follows.

**Table 1.** Comparative data showing the national average percentage of the students' English achievements in Primary 6, Secondary 3 and Secondary 6 from academic years 2003 to 2007

| Academic year in %<br>Academic Level | 2003  | 2004  | 2005  | 2006  | 2007  |
|--------------------------------------|-------|-------|-------|-------|-------|
| Primary 6                            | 41.14 | 37.34 | 34.51 | 32.12 | 38.12 |
| Secondary 3                          | 36.14 | 37.92 | 32.98 | 30.85 | 29.20 |
| Secondary 6                          | 37.34 | 31.71 | 39.14 | 29.81 | 30.93 |

These outcome records in English were lower than those in other subjects and they continually have a tendency to decrease. Yet regarding the English learning achievements and outcomes of students from schools with learning management using English as the medium of instruction in the curriculum of the Ministry of Education or Bilingual Program, English Program (EP) and Mini-English Program (MEP), including that of students from the schools with learning management using English for Integrated Studies (EIS), an innovation for bilingual education development, it was found that the learning outcomes were obviously higher than those of students in the traditional program. Additionally, these students were able to use English for communication comparatively well. (OBEC, 2005; Ngamsom, 2004, 2006)

Although the EP and MEP bilingual education management, which are organized in several schools nowadays, yield a satisfactory resolution for the problems mentioned, there are many obstacles hindering the efficiency of education development, especially one relying on the

use of foreigners as the main teachers in instructional management. The foreign teachers have no adequate background or understanding of Thai culture based teaching-learning management. Being unable to deliver the bilingual education to the majority of the low economic public causes a lack of balance and sustainability in solving the difficulties, unable to produce the desired moderation, reasonableness, and self-immunity outcome. The Office of the National Economic and Social Development Board has also respectfully included the Sufficiency Economy Philosophy (SEP) in the 9<sup>th</sup> and 10<sup>th</sup> national development plan, which becomes the national model plan for ministries, departments, and other governmental units to follow.

Through the EIS approach as the teaching-learning management was first introduced in Sunthonphu Pittaya Secondary School (SPSS) at the beginning of academic year 2005 by the researcher, the local students were from the low economic status. EIS applied the SEP by using the adequate policy in which the students' parents agreed to pay an affordable amount of tuition. The instruction was managed by Thai teachers trained by the International Studies Program of Burapha University. Both school administrators and teachers played important roles in developing the curriculum, using English as a medium of instruction in Mathematics, Sciences, and Computing. The learners learnt to understand the language and subject matters that were in the adopted textbooks from Singapore. These have brought about increasingly improved development, eagerness and aspiration to teachers and students (Ngamsom, 2006).

Apparently, the increased learning outcomes have proved EIS's effectiveness. In 2005 the EIS approach was introduced into six nearby primary schools and in 2006, EIS was additionally tried in five other primary schools within Rayong Municipality area and a high school in Chantaburi Province. By the end of the academic year 2006, it was found that there was higher improvement in the students English learning outcomes in these schools which were employing EIS than those of students in the traditional program (Ngamsom, 2007). In 2006, meanwhile, the first experimental group at SPSS graduated from Secondary 3 with their learning outcomes in English, Mathematics, and Sciences no different from those of the students in the other renowned schools with EP and MEP in Bangkok and in the city areas tested in the O-Net. The use of EIS also improved the teachers and learners positive attitude, drew great attention from parents and the community to the project inducing them to greatly participate in SPSS school educational management. The success could also answer the problems in the EP and MEP schools, for instance, "How can we have the benefit from foreign teachers teaching in Thailand?" "What have they left for us after their departure?" "How can students from low economic status have the opportunity for bilingual education?" "How do we develop a certain type of bilingual education which can be used by Thai administrators and teachers for teaching-learning design and management, aiming to efficiently solve the problems mentioned?" (Ngamsom, 2008)

**Having used the concept of administrative coaching and monitoring laying on leading for change approach of Michal Fullan (2005)** applying the Knowles's assumption (Knowles et al., 1998) of adult learning and Shewhart's systematic P-D-C-A Cycle (Swanson & Holton, 2001) to develop teaching-learning management in the basic education curriculum, it was found that EIS, which is another effective educational innovation, is able to solve the problems of bilingual education in the Thai basic education curriculum. The EIS Project has proved its effectiveness with SEP applied; especially the concept of self-immunity and moderation by developing Thai teacher's potential, offering reasonable and affordable tuition fees for bilingual education to the public with lower economic status. This has resulted in the sustainability for EIS bilingual education including even small schools of differing levels that

benefit from the project. EIS also keeps with the concept of Reasonableness, Moderation and Self-Immunity. It is able to solve the problems of governmental burden in teaching-learning management of EP and MEP programs which only the bigger schools can succeed and afford. Hence, from academic year 2006 to 2008 the researcher conducted an in-depth research study in the EIS project in SPSS as well as other schools in Rayong and Chantaburi Provinces which adopted the EIS approach. The results were aligned with SEP's principles, especially the concept of Reasonableness, Moderation and Self-Immunity, which produce balance and sustainability in the context of Thai culture.

## **The purpose of the study**

The purposes of this case study are to discover the key components of EIS which may improve the effectiveness of the developmental bilingual education in Thai basic education and to analyze and align the key components of the EIS approach laying on SEP's theory, especially the concept of Reasonableness, Moderation and Self-Immunity, which maintain balance and sustainability in the context of Thai educational culture.

### **Research Question:**

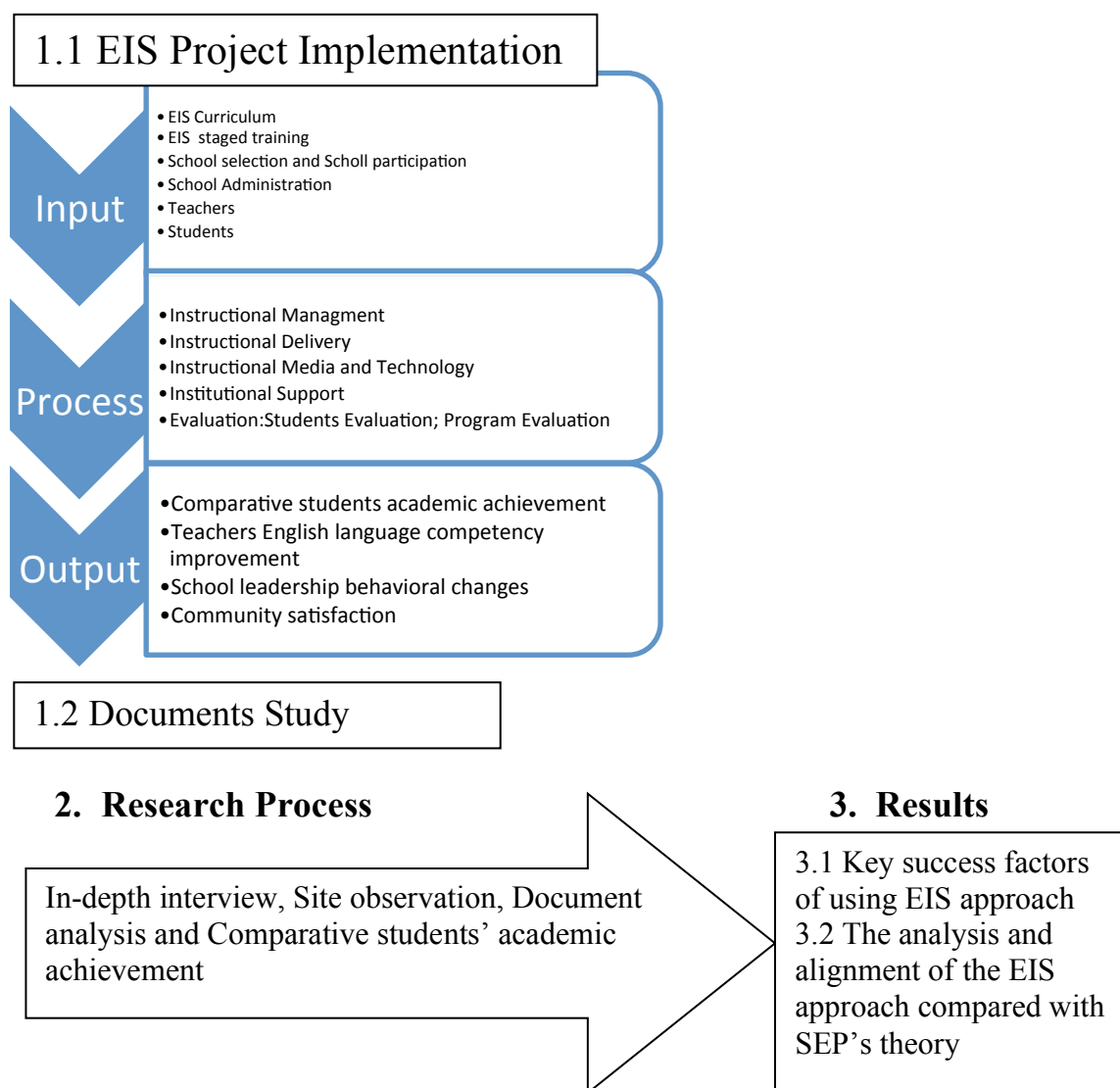
1. What are the key components of the EIS approach to create effective curriculum development in the Thai basic curriculum?
  - 1.1 What are the characteristics of the EIS approach in the curriculum?
  - 1.2 Can EIS teaching-learning management develop efficacy of NEST?
  - 1.3 What are the key characteristics of school principals for successful EIS management?
  - 1.4 What are other local environmental supporting factors for EIS effectiveness?
  - 1.5 What are the Efficiency and Effectiveness of EIS developing Project, regarding learning results and compared learning outcome of SPSS's Secondary 3 and 6 students in the academic years of 2006-2008 and learning outcome in English subject of students in the EIS program, EP program and other special programs of academic year 2007?
2. Does EIS align with SEP?

## **Conceptual Framework of Research Study**

Scope of the research study highlights the 2005-2008 EIS project conceptual experimentation in documentation and the implementation during 2007 – 2008 limits its scope to three simple components: Input, Process, and Output, all of which could be briefly identified in the following framework.

## Conceptual Framework of Research Study

### 1. Independent Variables



**Figure1. Conceptual Framework of Research Study**

The independent variables of the research study focus in the EIS project implementation and document studies as following;

#### 1. Input

##### 1.1 EIS Curriculum

The curriculum was the standard Thai basic education curriculum sanctioned by the Ministry of Education. The only differences were in the textbook selection and supporting materials being prepared and presented in English and integrated the EIS 4 assumptions in teaching–learning process such as the following:

I. Learners are able to effectively learn the second language from their mother tongue, symbolic language and from their closely related environment, such that Short (S), Simple (S) and Familiar (F) so we call it the **SSF model**.

II. If the instructor arranges the learners to practice reading and writing with the English language by using science learning skills, **(Observing Knowledge (OK) Model** learning skill, observation, comparison, classification, transferring and inferring) it will lead to the increase of the learners' ability in reading-writing and reading comprehension in English.

III. If the instructor constructs his lessons in a way that let the learners connect the notions to the English Language through analysis and mathematical problem solving. This MM Model (**Mathematical Methodology Model**) promotes an easier and faster way to increase the learners' English comprehension.

IV. If the instructors use English enough in classroom interactions, it leads to the learner recognizing and understanding English more quickly.

### 1.2 EIS Staged Training

The training stresses creating realization and understanding of EIS approach, motivating desire for the improvement of Basic English skills, classroom English, and designing the teaching plan.

### 1.3 School Selection and School Participation

Implementation input focused on the school selection process. Each school voluntarily joined the EIS experimentation believing the approach would help elevate their students' academic achievement including students' ability to use English as a second or foreign language similarly to other well funded EP and MEP schools in the country.

### 1.4 School Administrators

The main factors leading the schools to participate in EIS was the leadership ability and the decision to lead their schools into a new, higher standard of thinking and that their schools could not be standing still, not trying any new ways in educating students, knowing that the government standard practices and education did not help them achieve their goals.

The courage and tenacity of the school leaders led the teachers and parents to implementation success.

### 1.5 Teachers

Teachers in the program communicated with and instructed students in mixed English and Thai when necessary. Teachers persistently encouraged students to participate in their oral communications within the context of the subject matters of the curriculum.

### 1.6 Students

Students in turn used their simple English to communicate back to teachers as best they could.

## 2. Process

### 2.1 Instructional Management

EIS schools conferred with their school board and discussed the framework as well as the practices of the approach.

### 2.2 Instructional Delivery

Delivery was done using English as the main medium of instruction in the subject areas of Mathematics, Science, English and Computer Technology. The use and teaching of computer technology was employed only in the secondary school level since they were more readily available to students than those of the primary schools.

### 2.3 Instructional Media and Technology

The instructional media used in both primary and secondary academic levels included Singaporean based textbooks and other available English language supplemental materials. Lacking funding, most schools utilized the basic instructional instruments of textbooks and locally available materials only while some schools might utilize their available overhead, computer technology and LCD projectors.

### 2.4 Institutional Support

There was no governmental support in the implementation from 2005-2007. Schools in the project were self-supported with parental financial assistance when possible.

### 2.5 Evaluation

Two types of evaluation were employed in the implementation of the EIS project in these schools.

#### 2.5.1 Student Evaluation

Students' progress was evaluated every two weeks using regular educational evaluation and measurement approaches normally used in each school setting. The progress criteria covered learning behavior, moral principles, knowledge and skills development and academic achievement scores.

#### 2.5.2 Program Evaluation

EIS schools evaluated their programs operational success using EIS basic guidelines and index including management, academics, community relations and intra-school communication. Each school was autonomous in their operational evaluation with the mentoring help from participating SPSS teachers and Burapha University faculty members.

## 3. Output

EIS experimentation expected to see changes in the following factors:

3.1 Comparative students academic achievement in the experimental areas together with schools in Chantaburi and Rayong provinces and Rayongwitayakom, and Makudmuangrachawitayalai Schools' EP/MEP in Rayong, and Klang wittyasataworn school's special program.

3.2 Teachers English language competency improvement

3.3 School leadership behavioral changes

3.4 Community satisfaction of the implementation and its impact.

## **Research Process and Results**

The study use Creswell's qualitative research case study approach such as; in-depth interviews, site observation, document analysis and comparative students' academic achievement to study the findings according to the scope and questions of the research.

## Research Methodology

The populations of in-depth research are from the school's administrators, teachers, students and parents from SPSS and the schools that implemented the EIS, both primary and secondary (Junior High) schools in the school years 2006-2008. The comparative study was conducted in the secondary schools EIS, EP, and other special programs in several schools during academic year 2007. The 2006-2008 study used purposive sampling to gather data from 20 samples in both primary schools and secondary schools which implemented EIS for at least 2 years in the Rayong and Chantaburi provinces to find key components influencing the effectiveness of EIS while the 2007 English efficiency and effectiveness study samples were from the EP or MEP and other special program in Rayong only.

There were four research instruments used in the study: the guidelines in-depth interview, the site observation, the document analysis and the learning achievement test. The guidelines in-depth interview instrument of this study was advised and checked by specialists from Burapha University and was used in conjunction with site observation and operation document analysis. To save time and ensure the accuracy and validity of the test, the 2006 English NT exam set with randomly re-arranged test questions and answer choices was used as pretest and posttest instruments to determine and compare the learning achievement of all secondary 1 and 2 students in the EIS, EP or MEP and other special programs in other schools during the academic year 2007.

The researcher conducted an in-depth interview of 4 principals, 8 teachers, 4 students and 3 parents; 3 teachers, 2 students and 2 parents of SPSS; 2 principals, 3 teachers, 2 students and a parent of Benjamarachutid Chantaburi, and 2 principals and 2 teachers of primary schools; Watplongsawai and Tesaban Watkhod, for 30- 90 minutes per person depending on the contents, site observation and the documentary study of all key-informants and participants. After that, data was gathered for both classifications codifying and rechecking from the participants, whose prior collection was not complete, and analyzed using Creswell's qualitative research case study approach in the data collection and analysis (p.109-162, 1998). For the quantitative data collection and analysis, the learning achievement test were conducted via a pretest in May, 25-28, 2007 while the posttest was conducted in June, 2-6, 2008. The researcher then conducted an analysis using the basic statistical procedures namely percentage, arithmetic mean, standard deviation, and t-test to check the reliability of the learning achievement results of the posttest. In finalizing the research, the researcher employed focus groups composed of research participants and the specialists to verify and clarify the findings from the gathered data in analyzing to synthesize processing.

## Conclusion, Discussion and Recommendation

Through the in-depth interview, site and participant observation of all key-informants, documentary study and the research analysis of Modern Bilingual Education: English for Integrated Study (EIS) Curriculum, A Case Study in SPSS, 2005, Effectiveness of English for Integrated Studies of Primary schools within the authority of Rayong Municipality, Rayong Province, 2007 and the Result of the EIS project teaching-learning development in SPSS in academic years 2006-2008, the researcher has found the key components influencing efficiency and effectiveness of EIS teaching-learning development in the basic educational curriculum, which can be summarized as follows.



**1. The key components of using EIS to create the curriculum development effectiveness in basic education are summarized as follows.**

1.1 The characteristics of EIS Curriculum comprise of:

(1) Using English as a medium of instruction to integrate with any subject content area, mainly in Mathematics and Sciences.

(2) Learning Standards for each subject department in different levels of study in the EIS Curriculum are synthesized from department standards and learning outcomes of different levels in the core curriculum of basic education.

(3) EIS Curriculum structure is synthesized from the guidance of organizing the learning hours and learning standards in 1.1 (2) stated above.

(4) The concept of EIS using in curriculum design approach is the 4 assumptions, such as the above mention.

(5) Teaching plan design must consider English literacy of the learners and must be relevant to 1.1 (2)-(4) mentioned, including using classroom English to relate the learning chapters of each subject which are in English.

(6) Using the majority of learning resources in Math and Science subjects similar to the learning materials used in the educational curriculum of Singapore.

(7) Levels of English difficulty in using learning resources are flexible and related to the resources in 1.1 (6).

(8) The Teaching and learning process emphasizes cultivating the learning skills or learning methods using the learning skill of the OK Model for transferring of knowledge and inferring the result with references. The process also places emphasis on cultivating moral principles such as; honesty, faith, diligence, patience, unity and helpfulness in the learning process. Moreover, the learning assessment includes behavioral progress, academic improvement, learning behavior and the subject tests as a part of teaching-learning management.

1.2 Efficiency of EIS instruction management relates and connects to developing Thai teachers' potential in teaching different subjects in English after (hours) of being trained on-the-job. The training stresses creating realization and understanding towards EIS methodology, motivating desire for the improvement of basic English skills, classroom English, designing the teaching plan relating to 1.1 (1)-(8), as well as the practice of how to manage EIS instruction via workplace learning. It also improves the teaching skills in using English as a medium according to the teaching methods developed in the training manual (Rayong Provincial Administrative Organization, 2008)

1.3 The administrator who realizes the significance of the EIS approach, has eagerness, understands, pays attention, encourages, has the personality of leadership (in directing, informing, pursuing the result) and reaches the personality of supervisor or coach will be able to efficiently encourage the increasing effectiveness of the EIS Curriculum development.

1.4 The school with an English learning environment efficiently develops the EIS Curriculum.

1.5 Teachers' English language fluency and instructional management competency develop faster with the use of Computer technology. Naturally, teachers' computer technology application competency has also improved significantly.

1.6 The instructors in the EIS network, both in Thailand and abroad reinforce the learning opportunity amongst administrators and teachers during work, effectively encouraging and stimulating the efficiency of teaching-learning management in the EIS Curriculum.

1.7 The students' parents who understand, pay attention, encourage and learn about their children's learning behaviors influence the learning result of EIS Curriculum development.

1.8 Results of studies, efficiency and effectiveness of EIS developing project, regarding learning results and comparing learning outcomes in different subjects of SPSS's Secondary 3 and 6 students in the academic years of 2006 - 2008, learning outcomes in English subject of students in EIS program, bilingual program, and other special program in several schools in academic year of 2007 in Rayong Province, are summarized as follows.

(1) The learning achievement in English, Science, Mathematics Thai and Social subjects of secondary 3 students in academic years of 2006 - 2008 (NT score) and secondary 6 students in academic years of 2007 and 2008 (O-Net score) are obviously higher than the results before academic year 2007, especially in academic years of 2008. The O-Net comparison of English, Science and Mathematics of EIS students were not different from that of the students in the renowned schools, and in the academic year of 2008. The 2007 and 2008 NT comparison of English, science, mathematics, Thai and social subjects of EIS students were slightly higher than that of the students in the other bilingual schools with higher readiness. (See table 2-5) (Ngamsom, 2008 and USEB, 2009.)

(2) The teaching-learning management procedure with an emphasis on the SEP's conditional virtue principles applied, which focused on the learning behavior controlling system, causes students' eagerness and learning attention in self studying (Ngamsom, 2008.)

(3) The parents who were satisfied with the teaching-learning management, showed interest in following up on their children's learning behavior. The parents' satisfaction of their children's learning behavior increased to a higher level than before (Ngamsom, 2008.)

(4) The students show interest and have courage to communicate in English with foreigners. Their communication ability is good, especially in intermingled activities with students from foreign sister schools or foreign volunteers/teachers.

(5) After EIS training, the non-English-speaking teachers can use English as a medium of instructions in their particular subjects. The teacher's technique of using English and their skills in teaching developed and increased. Moreover, they continued to learn by themselves while on-the-job. This satisfied the Sloman research, (2005) and almost all teachers use English in teaching with no difference from foreign teachers in EP schools.

(6) Efficiency and effectiveness of EIS instructional management is significantly better than that of EP and other special programs when comparing the context of educational opportunity, the program investment and their project development. The differential average score of English learning achievement on the reliability statistic significant was 0.05. (See table 6)

**2. The key components from the analysis and alignment of the EIS approach compared with SEP's theory, especially the concept of Reasonableness, Moderation and Self-Immunity which create balance and sustainability on improving the effectiveness of Bilingual Education in context of the Thai educational culture, are summarized as follows.**

**Reasonableness:** Applying conceptual methods to solve the problem through conducting research, the EIS approach is the strategy which solves problems of the teaching-learning procedure, learning effectiveness, English learning and analytical thinking of students by applying Krashen's second language theory and Singapore's basic education approach integrated with the Thai basic educational curriculum, using Shewhart's P-D-C-A cycle in coaching and monitoring procedures.

**Moderation:** Based on Thai culture, EIS approach emphasis is on the teaching-learning management development of the basic educational curriculum by using English as a medium of instruction through EIS structured on-the-job training of regular instructors who have experience in teaching particular subjects. It is a moderate sharing of the same opportunity for Thai people of every economic status.

**Self-Immunity:** Through the EIS approach, Thai teachers, especially those handling Mathematics, Science and Computer who have never used English in their classes are trained and have developed self-enthusiasm to improve their language skills in the teaching-learning process, bringing about a continuous senses of skill development, searching and learning through on-the-job experience, building knowledge management and an educational network for their career development.

Under the condition of **virtues** cultivated in the teaching-learning process, the EIS syllabus develops virtuous principles through moral concepts in classes through the use of learning assessment and evaluation procedures as mentioned in Act of Legislation of National Education year 1999 to encourage and control learning behavior of learners due to morality continuously emphasized.

Under the condition of **using knowledge** in developing the EIS syllabus integrates the concept of SSF, OK Model and Mathematical Methodology Model and uses theories of second language learning in teaching-learning activities for certain subjects and the use of English teaching materials issued in learning standards of the Thai basic educational curriculum applied to action research procedures to manage the learning process.

## Discussion

Developing the EIS syllabus in the basic educational curriculum is similar to developing a curriculum for managing bilingual education. The syllabus is adequate, proper and not too exaggerated, retaining the uniqueness of Thai culture and contributes educational opportunity to students from parents of every walk of life. The EIS syllabus development has reasonable components created via the application of Krashen's second language theory and Singapore's educational system to bring about the OK model, SSF model and Mathematical Methodology model as the knowledge component which in the end evolved as the EIS curriculum. The new curriculum in return solved the EP and MEP ill-qualified foreign teacher and its shortage or continuity problems. The EIS curriculum does not only prepare learners for the changing society, it also has become a very strong stimulus for Thai teacher's self-esteem and professional English proficiency development. The effectiveness in Mathematics and Science of EIS is not different from those of EP and MEP mainly taught by foreign teachers. Their communicative English fluency has surged far beyond those taught by foreign teachers though accuracy and grammatical correctness still needs further development. Regarding all the EP's and MEP's expenditures, and opening of educational opportunities for people using EIS as the instructional development, EIS is even more efficient and effective. In addition, the EIS procedure does not only fulfill the developing of students' potential in learning English but also in developing the potential and ability of the teachers for different teaching methods. It also reinforces students' capability in using English and is not different from those taught by non-Western foreign teachers. Additionally, it also has challenged both learners and teachers to be enthusiastic, attentive and active in continuous learning. This satisfies the Swanson and Holton's human resource development approach and the Sloman research, (2005).

Principals' understanding of the EIS conceptual framework and approach is crucial to both the promotion of teachers' self development and students' learning. Also, as principals apply EIS in their school, their management strategies change from mono-directional to multi-directional coaching and mentoring. With monitoring and coaching from the principals, teachers are encouraged to invest their interests in improving their own knowledge and skills to better deliver the subject matter and impart their knowledge to students. This mirrors the mentoring and coaching they have received from the principals. Their delivery method then change from traditional teaching into a more student centered approach of facilitating in learning. Reversely, students learn to rely on their own discovery of knowledge and develop their language skills to interact with teachers and peers with higher self-efficacy. The whole process stands to support Fullan's leading for change, Shewhart's PDCA cycle and promote the 2002-2016 'Virtue leads Knowledge' National Policy of Educational Development.

Besides answering many important problems and questions in this research, the effectiveness of the bilingual curriculum management also improves, resulting in a very possible effective basic educational curriculum development for the school and the whole nation.

### **Recommendation for further research and those who are interested**

1. The guidelines for developing EIS instructional management, applying SEP mentioned in the concept diagram of administering and managing the bilingual curriculum to contribute sustainable educational opportunity in the Thai cultural context below (see figure 2), is the result of this research and should be a good foundational model for the support of managing system to develop the learning process of English and analytical thinking as mentioned in the curriculum of basic education. This will also increase the level of knowledge, ability, and experiences of the learners as well as teachers. However, there may be some restrictions in this research which can be improved, developed and adjusted to be used in similar and different learning contexts.

A basic guideline for school improvement and development of effectiveness of EIS teaching-learning management in basic education applying SEP that relates to figure 1 can be summarized by the following steps.

- 1) The school has a clear policy of EIS educational management as well as participation of the whole organization.
- 2) The school develops the EIS teaching-learning process to bring the moral principles condition of SEP to apply in a practical learning process.
- 3) Evaluation and assessment procedures are for continuous reflection of genuine learning per weeks or units of study.
- 4) The Training workshop is to increase the foundation of language skills and EIS instructional techniques. To analyze and design the teaching process, the assessment criteria and rubric are made to relate to the nature of each subject and EIS developing process in 2) and 3)
- 5) Continuously, teachers use the results of 4) in classes for instructional improvement based on the learning assessment.

- 6) Administrators and advisory team continuously advise, follow up and encourage teaching and learning activities to improve and/or develop, evaluate and revise the instructional process.
- 7) After being advised and exchanging knowledge during work, teachers improve and develop the instruction using the results of the teaching-learning assessment to improve and develop the instruction and summarize it for further development in the next session and term.

2. Government should have an organization or adjust the roles of the former organization to support the policy suggested in the guidelines for developing EIS instructional management, applying the theory of the Sufficiency Economy mentioned in the concept diagram of administering and managing the bilingual curriculum to contribute to sustainable educational opportunity in the cultural Thai context.

3. Schools with EP and MEP bilingual curriculum should apply the EIS Curriculum to minimize the risk of foreign teacher shortages and to open educational opportunity to the public instead of some specific economically advanced groups.

4. When adopting the concept of EIS, schools (with the special programs) in which the learners with good English literacy and mathematical ability will be able to reinforce the higher potential development to learners. The concept also develops the capability of the teachers, building up the academic excellence and internationalizes the human resources of the nation into the levels of the brain class of the world.

5. To generate equal educational development opportunity to all people of the nation, applying this research to solve the schools' problems of low learning outcomes, low analytical thinking and students' low social and economic bases are necessary. It may be a reasonable solution, most reasonable and economical solution to adapt the subject matter of the EIS Curriculum to suit the learners' basic literacy in English including techniques and psychology of teaching to motivate and develop students' higher learning results and improve analytical thinking. This should lead to further research.

6. Institutions of higher education should co-conduct the research, experiments and develop EIS school programs to reinforce their pupils' experiences in teaching and to prepare the new-blood teachers for schools in the basic education in the future.

## **Application and Changes after the Implementation**

The findings and the positive results of the experimentation has brought interest and acceptance from schools nationwide. Rayong Provincial Administrative Organization provided teaching personnel and teaching development funding for the years 2008-2010. At present, thirty local primary and secondary schools in Rayong have voluntarily participated in the more advanced stage experiment. Furthermore, fifty other renowned schools throughout the country have joined the movement since 2009. The positive results and the school movements have driven the former minister of Education Julin Laksanawisit to announce EIS as a leading framework to drive the World Class Standard School project (ETV, 2010). Since April 2010, the movement has become a network of 125 schools throughout the nation. The current Minister of Education Mr. Chinaworn Bunyakiat has accepted and engaged EIS as a policy strategy to enhance the second decade of Thailand Educational revolution. (<http://www.moe.go.th/websm/2010/dec/440.html>)

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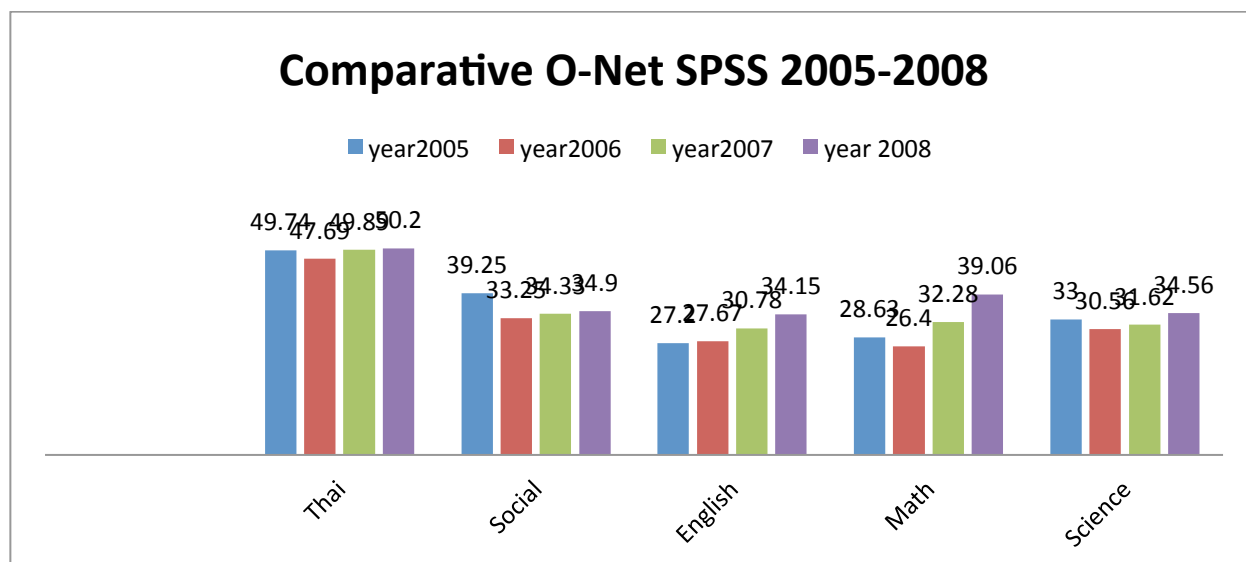
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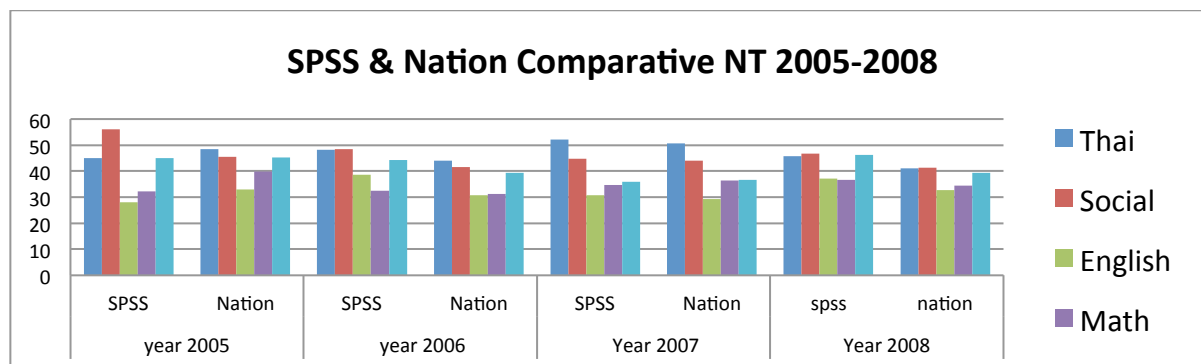
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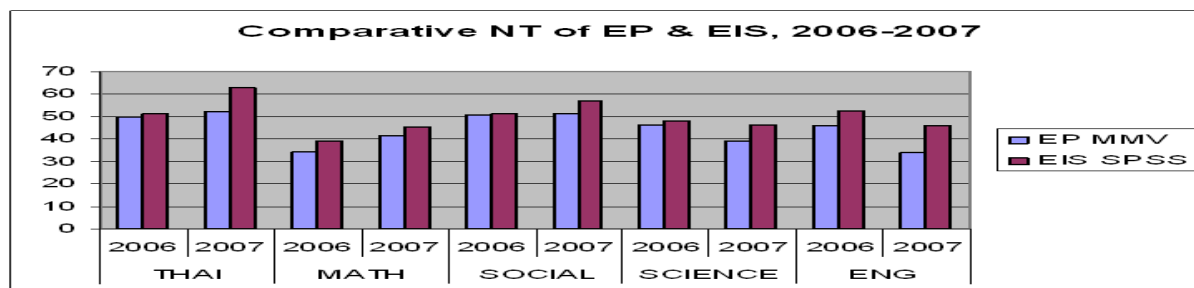
**Table 2. SPSS average O-Net (MS.6) score comparison, academic year 2005-2008**



Resource: NIETS

**Table 3. SPSS and national average NT (MS.3) score comparison, year 2005 -2008**

Resource: NIETS

**Table 4. EP (MMV) and EIS (SPSS) average NT score comparison, academic year, 2006 & 2007**

Resource: NIETS of MMV and SPSS

**Table 5: The comparison classification, number of schools, classification group and average score of O-net, academic year, 2008**

| The averaged score of each groups | The number of schools/ Average score              |  |
|-----------------------------------|---|--|
|                                   | Junior High School O-Net<br>(All:Chonburi:Rayong) | Senior High School O-net<br>(All:Chonburi :Rayong) |
| Highest group(1)                  | <b>269 : 5 : 3</b>                                | <b>277 : 11 : 6</b>                                |
| <b>Averaged score of SPSS</b>     | <b>42.50</b>                                      | <b>38.57</b>                                       |
| Averaged score of Higher group    | <b>37.94</b>                                      | <b>35.76</b>                                       |
| Higher group (2)                  | <b>593:15:12</b>                                  | <b>563:15:9</b>                                    |
| <b>Averaged score</b>             | <b>34.10</b>                                      | <b>32.08</b>                                       |
| <b>Lower group (3)</b>            | <b>861:6:3</b>                                    | <b>851:4:4</b>                                     |
| Averaged score of lower group     | <b>31.97</b>                                      | <b>30.05</b>                                       |
| <b>Lowest group (4)</b>           | <b>686:5:1</b>                                    | <b>649:1:0</b>                                     |
| <b>All schools</b>                | <b>2409:31:19</b>                                 | <b>2409:31:19</b>                                  |

Resource: NIETS and .OBEC, The High School Educational Administration Office



**Table6: The comparison of learning-teaching management efficiency of all school types**

THE COMPARISON OF LEARNING-TEACHING  
MANAGEMENT EFFICIENCY OF ANY SCHOOL TYPES

| Item                    | Level    | Pretest* June.2007 |       |      |     |     | Posttest**June.2008 |       |      |     |     | Differen-<br>tly of<br>average<br>d score | The<br>tuition<br>fee per<br>year(bat<br>hs) |
|-------------------------|----------|--------------------|-------|------|-----|-----|---------------------|-------|------|-----|-----|---|--|
|                         |          | N                  | X(40) | SD   | Max | Min | N                   | X(40) | SD   | Max | Min |   |  |
| EIS                     | MS 1     | 32                 | 13.69 | 3.03 | 23  | 9   | 32                  | 18.88 | 3.87 | 26  | 13  | 5.19                                      | 4,000  |
| EP 1                    | MS 1     | 20                 | 18.55 | 3.68 | 24  | 12  | 20                  | 21.75 | 4.29 | 27  | 14  | 3.20                                      | 34,000                                       |
| EP 2                    | MS 1     | 38                 | 22.74 | 4.14 | 31  | 13  | 38                  | 26.84 | 3.81 | 35  | 17  | 4.10                                      | 43,750                                       |
| Special<br>Progra<br>m  | MS 1     | 90                 | 14.22 | 4.13 | 26  | 6   | 90                  | 18.82 | 4.65 | 28  | 10  | 4.60                                      | 10,000                                       |
| EIS                     | MS.<br>2 | 34                 | 18.32 | 4.76 | 32  | 9   | 34                  | 22.65 | 3.77 | 30  | 15  | 4.33                                      | 4,000  |
| EP1                     | MS.<br>2 | 31                 | 16.87 | 4.64 | 28  | 7   | 31                  | 21.64 | 4.03 | 32  | 16  | 4.77                                      | 34,000                                       |
| EP2                     | MS.<br>2 | 46                 | 26.26 | 3.71 | 36  | 19  | 46                  | 27.97 | 3.96 | 36  | 16  | 1.71                                      | 38,750                                       |
| Special<br>Progra<br>m  | MS.<br>2 | 79                 | 17.73 | 5.15 | 27  | 8   | 79                  | 20.03 | 4.49 | 29  | 9   | 2.30                                      | 10,000                                       |
| All students<br>of Ms.3 |          | 196379             | 12.34 | 4.71 | 39  | 1   | 196379              | 12.34 | 4.71 | 39  | 1   | 0.00                                      |  |

N= number of students, X= mean, x(40)→ full score =40, SD.= standard deviation,  
Max= Maximum score, Min= Minimum score, Ep1= EP program of Rayongwittayakom school,  
EP2=EP program of Makudmuangrachawitayalai school, Special program = of  
KlangWityasatawornschool , EIS = EIS program of SPSS, All students of MS. 3 = (of Thailand)

**Figure2: Conceptual Diagram of Administrating and Managing Bilingual Curriculum to contribute Sustainable educational Opportunity in the cultural Thai context**

