

## **Evaluation of Learning Reform Results Based on the National Education Act, B.E. 2542**

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### **ABSTRACT**

*This study focused on summarizing and synthesizing the 3 subprojects : 1) evaluation of learners' outcome, 2) multi-case studies and 3) evaluation of stakeholders' changes. The two objectives were to evaluate the learning reform mean, to study the behavioral changes of all stakeholders, to study the effects of learning reform on the stakeholders in order to derive the recommendations for further reform. This multi-case, causal survey and evaluative research covered approximately 25,000 students, 5,000 teachers, 250 administrators from 250 schools across 5 geographical regions. Data were collected using questionnaires, performance testings, interviews, focused group interviews, site-visit evaluation and observations. The major findings were : 1) The learners' performance were quite satisfactory in academic knowledge and good in desired characteristics. 2) All group of stakeholders had changed their learning and working behaviors. 3) The comparison of indicators before and after learning reform revealed big differences across schools, and provinces. 4) Several significant factors affecting learning reform and policy recommendations were identified.*

## **Background Information**

The Thai Government promulgated The National Education Act of B.E. 2542 on August 19, 1999 (1999). The Act requires, regardless of educational system and educational objectives, rights and duties, educational reform in seven aspects. The first one is the learning reform focusing on learner-centered learning and authentic assessment. The second one is the improvement in the provision of education. The third one is promotion of research in various disciplines. The fourth one is accelerating the application of education, sciences and technology for national development. The fifth one is promoting teaching profession. The sixth one is the establishment of the system of educational quality assurance. The last one is the reform of educational administrative structure focusing on community and school-based management. Of all these seven aspects, learning reform is the significant intent of the Act.

After the promulgation, the Office of National Education Commission (ONEC), having responsibility to set policy, plan, support, monitor and evaluate the educational provision at the national level, had motivated and pushed every stakeholders and responsible institution and organization to play important roles, to proceed and to accelerate learning reform. Along the reform process, ONEC had conducted evaluative research to assess the reform success, especially the whole-school learning reform.

There were four national-level research projects, aiming to evaluate learning reform with research funding support from ONEC. The first three pieces of research were a national survey research aiming to assess learning reform results, conducting in three consecutive years of 2000, 2001 and 2002. The data pertaining to learning reform, school-based management, quality assurance, and school environment were collected through questionnaires from a sample of approximately 160,000 administrators, teachers, students and parents, and analyzed by comparisons and regression analysis. It was found that there was progress in every aspect of learning reform except authentic assessment. Unfortunately, this project could not display the true progress because the samples in each year were not the same cohort. The second project was the Evaluation of the Learning Reform School for Learning Quality Development Project with research

support from ONEC and ADB. The data pertaining to learning reform and authentic assessment, school-based management, teacher development through amicable supervision and classroom action research, and school networking, were collected through questionnaires asking performance before and after the Project began, focus group interview, school visits, school reform reports, from 20,000 key informants. It was found that the administrators and teachers had increased their performance quantity and quality by 20–50% in all missions. Of all 250 pilot schools, there were 183 schools (73.2%) had successful school reform. The most important factors, which could account for 54.2% of variations in school reform success, were teachers' and administrators' attributes and reform process.

Those four evaluative research reports still had certain weak-points in the evaluation of learning reform. Firstly, they did use self-evaluated questionnaires rather than standard achievement and/or performance test, the result of which could provide only the learners' perceived competency and desired characteristics rather than the true ones. Secondly, they employed evaluation approach emphasizing on quantitative data rather than qualitative data. Thirdly, although the fourth report had collected learning reform data twice, the evaluative results could only provide a change or growth without any information about the trends of growth whether they were linear or non-linear. With the intention to maintain the strengths and rectify the weakness of the previous evaluation reports in order to get better learning reform evaluation results, the researchers had designed this evaluation to cover much more in-depth and extended information than those from the previous evaluation ones. Consequently, there were 4 subprojects in this national evaluation of learning reform. They were 1) Evaluation of learners' outcomes, 2) Multi-case study, 3) Evaluation of stakeholders' changes, and 4) Synthesis of the first three subprojects. This evaluative report was the fourth one, focusing on summarizing and synthesizing the learning reform evaluation from the following three evaluation activities. 1) The development and administration of the performance scales measuring and evaluating the learners' academic knowledge and desired characteristics. 2) The evaluation of the learning reform success conducive to the students and schools, employing the content analysis of the local researchers' evaluation reports of the pilot schools, focus group

interview, and site-visit evaluation. And 3) the evaluation of stakeholders' changes in learning reform behavior using survey of longitudinal data.

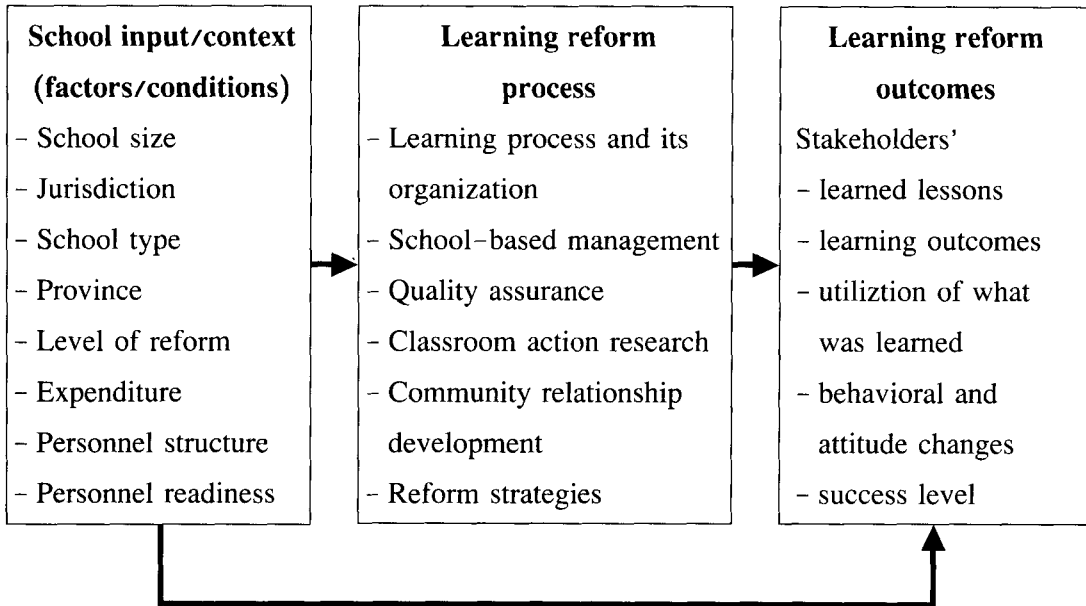
### **Research Objectives**

The first objective was to evaluate the learning reform success based on the National Education Act, B.E. 2542, aiming to study the effects of learning reform on the learners, teachers, administrators and the schools, and to study the behavioral changes of all stakeholders' and schools after the learning reform. The second objective was to derive the policy recommendations and practical guidelines to carry on the learning reform along the line in accord with the National Education Act, B.E. 2542.

### **Theoretical Background and Research Hypotheses**

This evaluation was a national project of the learning reform evaluation, employing the representative samples of the pilot schools and their personnel, the data from which could be generalized to every school in Thailand. The evaluation design was an integration of the theories of change evaluation approach, the self-evaluation approach, and the participatory evaluation approach (Chen, 1990; Lawrenz, Keizer and Lavoie, 2003; Minnet, 1999; Cousins, 1995; Scriven, 2000; Marsh, 2001). The amicable supervision system was designed which the local researchers offered their academic assistances and suggestions to, and helped empowering all the teachers and administrators in the pilot schools. The evaluation framework focused on the learning reform process and outcomes, covering three types of data. Three-wave longitudinal, quantitative data from field survey; qualitative data for multi-case evaluation collected from focus group interview, school-visit evaluation and local researchers' school evaluation reports; and data pertaining to learners' academic achievement and desired characteristics collected by using standard performance tests and scales.

The conceptual framework, as shown in Figure 1, had been developed based on the Learning Reform School for Learning Quality Development Project (National Education Commission, 2002), and the foreign evaluation reports of learning reform (Datnow, 2000; Molseed, 1998; Bodily, 2001, Olsen, 1999).



**Figure 1** Conceptual Framework

Based on the conceptual framework, four research hypotheses were developed.

- 1) The learning reform had yielded satisfactory level of learners' academic outcome and desired characteristics, differences in means and distributions of learning outcome across groups of schools with different size and jurisdiction.
- 2) Learning reform had both positive effects on contextual development, learning climate, learning process organization and school-community relationships, and negative effects on shortage of educational budget, and personnel shortage.
- 3) The behavioral changes of teachers and administrators, before and after learning reform, were high on learning reform understanding, staff development, learning process organization, classroom action research, quality assurance and school-based management, but were low on learning outcomes born to the learners.
- 4) Factors having significant effects on schools' learning reform were administrators' management competency and administration process, previous participation to the Educational Reform Project, the amicable supervision, teachers' readiness and working process, and learners' learning process. The barriers and problems of learning reform were mainly the shortage of staff-members and school expenditure.

## **Research Methods**

This learning reform evaluation was an evaluative research, integrating three research approaches: descriptive research, multi-case study approach, and causal survey research approach. The research design was an ex-post facto research design using both quantitative and qualitative research approaches.

## **Population and Sampling Design**

The population for this research consisted of all Thai schools providing basic education and their administrators, teachers, students and other stakeholders. For sampling design, the sample size was set using Cohen's formula (Cohen, 1977), and the multi-stage sampling plan was designed to select approximately 25,000 Pratomsuksa 6 and Matayomsuksa 3 students, 5,000 teachers, and 250 administrators from 250 schools. Firstly, one of the five representative provinces was purposively selected from each of the five geographical regions: Ratchaburi from the Central, Chiangrai from the North, Bhuket from the South, Khon Kaen from the Northeast, and Choburi from the East. Next, from each of the five selected provinces, 300 schools providing basic education were randomly selected using stratified random sampling based on school jurisdiction. From each of the selected schools, the administrators were invited to be the sample, approximately 20 teachers were randomly selected, and a class of Pratomsuksa 6 and Matayomsuksa 3 were selected, from each of which approximately 40-45 students were randomly selected. In addition, other groups of stakeholders were purposively selected for interviews in the process of site-visit evaluation. The last group of key informants were 5 teams of 11 local researchers from universities, Rajabhat Institutes and Educational Organizations. Each team was responsible for evaluating the performance of the 16 sampled schools selected from each of the five sampled provinces, helping, and giving amicable supervision to their sampled administrators and teachers.

## **Data, Instruments, Data collection and Analyses**

For each of the following four research activities, the aims, data, research instruments, techniques of data collection and data analyses were designed as follows:

**1) Evaluation of Learners' Outcomes.** The aim of this research activity was to evaluate the results of learning reform conducive to learners using performance tests measuring learners' academic performance (academic knowledge and thinking skills) and self-rating performance scales measuring learners' desired characteristics (inquiry and working skills and good citizenship). Based on the National Education Act, B.E. 2542, Standards for external evaluation developed by the Office of the National Education Standards and Quality Assessment, Primary Education and Secondary Education Curricula, B.E. 2521 and 2533, the performance tests and scales were developed. The quality check for each dimension of the tests and scales, indicated moderate difficulty indices ranging from 0.55–0.57, satisfactory discrimination indices of 0.24, good reliability ranging from 0.59–0.90, and good content and construct validity. The comparison between these tests and the National tests yielded similar reliability coefficients, and a little difference in difficulty indices. The researchers administered the tests and scales with 13,078 Pratomsuksa 6 and 12,534 Matayomsuksa 3 students, from 199 schools in December 2003. Data were analyzed using a comparison with the criteria, analyses of differences between means, variance component analysis using HLM.

**2) Multi-Case Study.** The aim of this research activity was to evaluate in order to get richer information on school context and environment, learning reform occurred both in classrooms and schools, evaluation results of learning reform conducive to learners and schools, factors facilitating and problems and barriers obstructing learning reform. The research methods started with a review of related literature, a categorization of 12 evaluative issues: origin of school reform, reform strategies, learning reform results conducive to students, teachers and schools, community relationships, reform impacts, problems and obstacles, facilitating factors, reform needs, assisting organizations, and learned lessons. The data for this study came from 80 sampled schools, purposively selected by the local researchers teams, 16 schools from each of the 5 sampled provinces. The data were collected from three different sources. Firstly, the five external evaluation reports, each of which was conducted by the local researchers team in November 2003–February 2004. Secondly, ten focus group interviews, two interviews for teachers and administrators from 28 selected schools in the 5 sampled provinces. Thirdly, the school-

visit evaluation of 10 selected schools conducted by the researchers in January–February 2004. The analyses used to synthesize data, were content analysis based on the twelve categories, the presentations of conceptual framework, the quantification of qualitative data and the quantitative data analysis to study the relationship between school context, learning reform process and outcomes using descriptive statistics, analysis of variance and chi-square test.

**3) Evaluation of Stakeholders' Changes.** The aim of this research activity was to evaluate the behavioral changes of learners, teachers, school administrators, other stakeholders, and school context, before and after the promulgation of the National Education Act, B.E. 2542, to study factors affecting learning reform outcomes. Data for this evaluation were response to the self-evaluated, four-level rating type questionnaires, measuring behaviors before and after learning reform. The questionnaires were constructed and validated based on the major content of the national Education Act, B.E. 2542 and 2545, namely: beliefs/knowledge/understanding/behavior of learning reform, teachers' organization of learning process, school-based management, classroom action research and educational quality assurance, learners' learning process and outcomes. The quality examination of the questionnaires collecting two-wave data from administrators, teachers and students, revealed good quality of reliability coefficients ranging from 0.795–0.983, 0.801–0.980, and 0.804–0.931, respectively. Data collection was outsourcing to Suan Dusit Poll, Suan Dusit Rajabhat Institute, who collected data in January–March 2004. The return questionnaires came from 197 administrators (65.66%), 2,951 teachers (59.02%) from 220 schools, 10,015 Pratomsuksa 6, and 7,843 Matayomsuksa 3, and 33 unidentified level students (89.45%) from 161 schools. Data were analyzed using descriptive statistics, mean comparisons, multiple regression, repeated measure analysis of variance, and the analysis of the structural equation model or LISREL model.

**4) Evaluation of Learning Reform Success.** The aim of this activity was a synthesis of the results of the first three research activities, in order to answer the research questions based on the evaluative issues. Data for the evaluation synthesis were data from three research activities, merging together into the same data file, and were analyzed using the following evaluation framework as displayed in Table 1.



**Table 1** Evaluation Framework

Objectives	Evaluative issue	Indicators/Data	Sources (Data Collection)	Data Analysis
1.To evaluate the learning reform success based on the National Educational Act, B.E. 2542	1.To what extent were the learning reform results conducive to the learners, were the quantity of changes and what were the trend of changes?	<ol style="list-style-type: none"> <li>1. Learners' learning process</li> <li>2. Learner's learning outcomes</li> <li>3. Teachers' learning process organization</li> <li>4. Reform beliefs/knowledge</li> <li>5. Action research</li> <li>6. School quality assurance</li> <li>7. Staff development and amicable supervision</li> <li>8. Community relationship</li> <li>9. performance/satisfaction</li> <li>10. Problems/Needs/Causes</li> </ol>	<ol style="list-style-type: none"> <li>1. Students (Q, I)</li> <li>2. Administrators, teachers, school committee (Q, I, FGI, SVE)</li> <li>3. Case study reports (RF)</li> <li>4. Related documents (RF)</li> </ol>	<ol style="list-style-type: none"> <li>1. Quantitative data: descriptive stat., analysis comparing learning reform results with the criteria, trend analysis</li> <li>2. Qualitaive data: content analysis to study the context, nature and changes</li> </ol>
	2. What were the school learning reform were there any variation among school type, control? How much were the inequality?	<ol style="list-style-type: none"> <li>1. Learners' learning process</li> <li>2. Learner's learning outcomes</li> <li>3. Teachers' learning process organization</li> <li>4. Reform beliefs/knowledge</li> <li>5. Action research</li> <li>6. School quality assurance</li> <li>7. Staff development and amicable supervision</li> <li>8. Community relationship</li> <li>9. performance/satisfaction</li> </ol>	<ol style="list-style-type: none"> <li>1. Students (Q, I)</li> <li>2. Administrators, teachers, school committee (Q, I, FGI, SVE)</li> <li>3. Related documents (RF)</li> </ol>	<ol style="list-style-type: none"> <li>1. Statistical analysis comparing means across the school types and control</li> <li>2. Analysis using HLM</li> <li>3.Content analysis</li> </ol>
	3. What were the behavioral changes of the administrators, teachers, and learners? Were there any differences across school type, size and control? Were there any inequality?	<p>Quantitative data: changes in all indicators before and after learning reform across school type, size and jurisdiction.</p> <p>Qualitative data: information reflecting changes in beliefs, knowledge, and behavior and differences across school type and jurisdiction</p>	<ol style="list-style-type: none"> <li>1. Students (Q, I)</li> <li>2. Administrators teachers, school committee (Q, I, FGI,SVE)</li> <li>3. Related documents (RF)</li> </ol>	<ol style="list-style-type: none"> <li>1. Descriptive stat. studying changes</li> <li>2. Analysis of mean differences across school type and jurisdiction</li> <li>3. Analysis using HLM</li> <li>4. Content analysis</li> </ol>

Objectives	Evaluative issue	Indicators/Data	Sources (Data Collection)	Data Analysis
	4. What factors were the cause explaining changes? What were problems, conditions and solutions?	Same indicator and data as stated above, including the stakeholders' opinion about the learning reform cause, problems, solutions.	Same sources and data collection as stated above	1. MRA, ANOVA, and LISREL 2. Content analysis
	5. What were the amicable supervision? Did they yield desired outcomes?	1. Amicable supervision pattern 2. the outcomes of the amicable supervision	1. Case study reports (RF) 2. Local researcher opinion	Content analysis
2. To provide policy guideline and recommendation for the reform success	What were the policy recommendation and guidelines based on the evaluative results?	1. Information and factors affecting learning reform success 2. Problems and obstacles 3. Suggested strategies	Researchers (RF)	Synthesis of the Evaluation results

Note: Q = questionnaire

I = interview,

FGI = focus group interview

SVE = site-visit evaluation

RF = recording form

## Research Findings

### 1. The Conditions Before Learning Reform

The schools did not start reforming process from zero, because the Ministry of Education had already disseminated the learning reform policy to the schools for implementation. After the promulgation of the National Education Act, B.E. 2542, the teachers and personnel began to be aware of and know about reform significance, and they had already started reforming the learning and teaching process. The period between 1999–2001 was rather the confusing period of a certain group of teachers, who had misconception about and mal-performed learning reform. The major problematic issues were learning reform organization focusing on the importance of the learners, classroom action research, and quality assurance. The teachers had learned different concepts from several formal sources and got confused. Fortunately, these confusion and misconceptions had gradually declined.

## **2. The Nature of Learning reform**

Based on the multi-case study, it was found that the sampled schools had similar learning reform pattern and used similar learning reform strategies/techniques. The most frequent used strategies/techniques were as follows: staff development, using training; curriculum development and the organization of learning process based on the learning reform; designing of management, monitoring and follow-up system; school quality assurance system; promotion of learning exchanges; working in a team and participation; learning resource development; creation of atmosphere, accelerating learning reform; leaderships in learning reform, and the extension of the school network.

## **3. Learning Reform Effects**

**3.1 Effects on Learners.** The evaluation revealed that, for the student level, learners were cheerful, quite happy in learning, had good mental health, love and were proud of their schools, were eager to learn, knew how to and were able to inquire knowledge and work, were able to work collaboratively in team. From the self-evaluation, learners estimated that in average, they were able to express themselves, had high grade point average, and high morality. However, the result of the performance tests and scales indicated that the academic knowledge, thinking and inquiry skills of Pratomsuksa 6 and Matayomsuksa 3 students were unsatisfactory. Considering at the school level, more than 90% of the sampled schools had average scores of academic achievement, and thinking and inquiry skills in the level of improvement. The analysis using HLM revealed that there were differences of 70–80% across learners within schools, of 70–80% across schools within jurisdiction or control, and only 10–20 % across school jurisdiction.

**3.2 Effects on Schools.** Learning reform had both positive and negative effects on schools. On the positive side, schools had developed greatly in terms of school context, learning climate, and working system. Many sampled schools had been recognized as a prototype model, and accepted by the communities. The community relationship with the school became stronger, however, there were still the problems of staff-member and educational budget shortages.

**3.3 The Changes Before and After learning Reform.** Learners had changed their learning process and behavior, and perform more self-directed inquiry for better knowledge. The administrators and teachers had drastically changed their working behaviors, the trends of which were rather nonlinear with a big change at the beginning and a low one later. The administrators worked harder and the amount of working time increased about 7–8%, the amount of researches increased by 20–40%, the number of books read, reading time, and internet usage increased about 30–50%. The teachers also worked harder, and significantly employed the instruction process with more of the learning process organization focusing on learners' importance, employed variety of teaching methods and leaning evaluation, worked harder on school quality assurance system, as compared to those before learning reform. However, there were a certain group of teachers who had mal-performed, used too many worksheet, employed traditional learning evaluative methods, and worked in a team with collaboration, not strong enough to drive for whole-school learning reform. The school administrators were mostly the one who initiated learning reform in schools. They improved the management system, but the changes conducive mainly on themselves, and hardly disseminated to the teachers and students.

As a whole, the learning reform evaluation indicated that learning reform had positive effects and created changes in school contexts, administrators', and teachers' working and learning behavior, and students' learning behavior. However, there was no clear evidence in the changes of academic learning results. The comparison of indicators measuring before and after learning reform across schools, types, size, jurisdiction, and provinces, revealed big differences in every evaluation category across schools within jurisdiction, a difference across school size, and type, and a small difference across provinces. The most important factors affecting learning reform were learners' learning outcomes, administrators' characteristics and management process, teachers' characteristics and teaching process, especially the teachers' knowledge, classroom action research, the amount of time spent in organizing learning process, schools' previous experience from participating in the pilot project on learning reform. All the predictors could be explained approximately 88% of the variances in learners' learning outcomes. Problems and

barriers of learning reform were shortages of staff–members, mostly from participating in the early–retirement program, budget, and misconception about learning reform. The organization plying important role to support the schools' learning reform were the parent organizations of the schools both at the district, provincial, and the local service area level. The parent had more trusts in schools and helped participated in the school activities.

## **Recommendations**

1. The study indicated that the administrators were the key factor facilitating learning reform, that most of the schools having less efficient administrators tended to have problems and failed to success in learning reform. Hence, there should be a strategy for the follow–up and monitoring the school administrator, and the self–directed evaluation for the administrator to develop himself/herself.

2. This research findings indicated rather low rate of behavioral changes in learning reform of the administrators, and teachers, that there was no clear evidences of learning reform effects on students' academic outcomes, and some of the teachers still confused and had misconceptions because of different knowledge learned from different sources. Hence, there should be a further study to get a strategy driving and enabling the administrators and teachers in implementing learning reform concepts as stated in the National Education Act, B.E. 2542. Every parent organizations of the schools should carry on the staff development program in a similar concept and content, in order not to create any confusion. Moreover, There should be a research diagnosing the teachers' misconceptions and urgently rectify them.

3. The finding from multi–case study revealed that the school–based management had been known and practiced only among the top–level of administrators, with only a little practice among the teachers and students. There should be a promotion and acceleration for the administrators to decentralize the power to the practical level.

4. The shortage of educational budget and staff–member problems remained a persistent problem. There should be a process acquiring and providing enough and thorough supports in manpower, science and technology and budget, from both the public and

private sectors, to the schools. The research institutes should be established in every local service area to continuously explore and seriously solve this problem.

5. It was found that the parents did not clearly understand the concept of teaching based on learning reform focusing most importance to the learners. There should be a public relation program for all stakeholders to be aware of and help supporting and participating to the learning reform.

6. A certain group of the teachers, in spite of the learning–reform–based teaching method, still employed the traditional evaluation techniques measuring only memory and content. Hence, the teacher development program on course evaluation should be extensively provided for this group of teachers.

7. The learners' performance on academic ability and desired characteristics was measured only once, it, therefore, could not reveal any changes. There should be a longitudinal measure in further research to yield clearer picture of learning reform effects on students' outcomes.

8. The students' academic ability in this evaluation, in average, were consistent with the National Test, indicating unsatisfactory results in mathematics, sciences, English, thinking skills and inquiry skills, all of which should be improved through the in–service training of the teachers in those subjects, and the acceleration of the production of new generation of sciences and mathematics teachers.

9. This study confirmed the significance of the local researcher pertaining to their valuable amicable supervisions, following–up, and academic assistance given to the schools. In this study there was one local researcher working with eight schools, yielding the ratio that was quite appropriate for further extension of pilot study. The program should be extended in terms of in–service training of the schoolteachers, and the new teacher education program producing new generation of teachers, with cooperation from Faculties of Education and Rajabhat Institutes.

## References

- Office of The national Education Commission. (2002). *Evaluation of Learning Reform Result*. Bangkok: Evaluation Group 1, Office of The national Education Commission. (In Thai).
- Office of The national Education Commission. (2002). *Reforming Process for Learning Quality Development: Evaluation and Assurance*. Bangkok: Office of The national Education Commission. (In Thai).
- Office of The national Education Commission. (2003). *Evaluation Report of Learning Reform*. Bangkok: Evaluation Group 1, Office of The national Education Commission. (In Thai).
- Bodilly, S. (2001). *New American schools' concept of break the mold designs: How designs evolved and why*. RAND Web Site. Available online: <http://www.rand.org/publications/MR/MR1288/>.
- Chen. (1990). *Theory-Driven Evaluation*. Newbury Park, California: Sage Publication.
- Cohen, J. (1977). *Statistical Power Analysis for the Behavioral Sciences*. New York: Academic Press.
- Cousins, J.B. (1995). Using collaborative performance appraisal to enhance teachers' professional growth: a review and test of what we know. *Journal of Personal Evaluation in Education*. 9: 199-222.
- Cousins, J.B. and Earl, L.M. (1992). The case for participatory evaluation. *Educational Evaluation and Policy Analysis*. 14(4): 397-418.
- Datnow, A. (2000). Power and politics in the adoption of school reform models. *Educational Evaluation and Policy Analysis*. 22(4): 357-374
- Lawrenz, F., Keiser, N. and Lavoie, B. (2003). Evaluative site visits: a methodological review. *American Journal of Evaluation*. 24(3): 341-352.
- Marsh, G.E. (2001). *AIL 601 Evaluation*. Available online: [http://www.bamaed.ua.edu/ail601/student\\_evaluation.htm](http://www.bamaed.ua.edu/ail601/student_evaluation.htm).
- Minnett, A.M. (1999). Internal evaluation in a self-reflective organization: one nonprofit agency's model. *Evaluation and Program Planning*. 22: 353-362.

- Molseed, T.R. (1998). *Evaluation of System-wide Restructuring Indictors for the Planning of Educational Change*. ERIC Clearinghouse on Educational Planning.
- Olsen, L. (1999). Researchers rate whole-school reform models. *Education Week on the Web*. 18(23): 14-15. Available online: <http://www.edweek.org/ew/vol-18/23air.h18>.
- Scriven, M. (2000). *The logic and methodology of checklists*. The Evaluation Center. Western Michigan University. Available online: [http://www.wmich.edu/evalctr/checklists/logic\\_methodology.htm](http://www.wmich.edu/evalctr/checklists/logic_methodology.htm).