Summary Report

National Pilot Study Report
Learning Reform Schools for Developing Quality of Learners

Reforming Process for Learning Quality Development: Assurance and Assessment

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Abstract

This report was the assessment of the whole-school reform model for developing quality of the learners, undertaken in 250 pilot schools. Its three purposes were a) to study the initial status and the changes in the pilot schools. b) To study whether the implementation of the school reform models achieved its objectives as planned, and to study the extent of the effects and impacts on learners. c) To study the factors and conditions affecting the performance success of the pilot schools. The analysis of the National Pilot Study indicated the appropriateness, the uniqueness in terms of its special characteristics, the accuracy, conformity to the Thai culture and the feasibility of the school reform model. The assessment of the school reform was participatory, collaborative and continuous process. The population consisted of all personnel involving with the provision of basic education in Thailand. The samples consisted of 250 principals, 7,444 schoolteachers and personnel, 6,584 grade 6 and 9 students, 6,653 parents and school board, 44 R&D Teams (a total of 105 researchers); 25 ONEC Team and 40 officers or representatives from the school authority units at the central and regional levels. Questionnaires measuring twice and three times, focus group interviews, and other qualitative techniques were employed for data collection. Data were analyzed using descriptive and advanced inferential statistics and content analysis.

The major research findings were a) the school reform models underlying the National Pilot Study worked very well in terms of the reform effectiveness, whole school collaboration, equality of school performance, and dynamic of changes. b) Seven factors could account for 54.200 % of variation in the success of the school reform, measuring by the post measurement. They were the pre-measurement of the process and product indicators of the principal, teachers and the students, the parental participation, the principal prestige, school size and proportion of the National, Master and Lead (Spearhead) Teachers. The effects of the principal's process and product indicators were twice as high as the effects of the teacher's process and product indicators, and the students' learning process and outcomes. The results of the structural equation model (SEM) analysis revealed that the theoretical model was valid and fit to the empirical data. The significant factors affecting the project success were all three latent exogenous variables of the principal's and the teacher's performance process, and the students' learning process. The factor loading of the observed variables indicating the latent factors of the principal's and teacher's performance process, were twice as high as the loading of the variables indicating the latent factor of the students' learning process. The total effect of the reform process on the reform success was 0.530, which was rather high. The school size and the number of the National and Master teachers had statistically significant effects on the project success. The content analysis of the qualitative data also supported the above findings.

The cooperation and collaboration among related institutes, the institutionalization of the school reform, were recommended for policy purposes. The integration, the use of evaluation results, learning by doing and the knowledge sharing activities, the amicable supervision, and the extension of the study to the duty of all stakeholder in investing in the provision of basic education were recommended for school reform. Further research to evaluate continuously and collaboratively the performance of the 250 pilot schools and the further research on school culture and ways of life in school were also recommended.

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Reforming Process for Learning Quality Development: Assurance and Assessment

1. Introduction

Background

In order to institute the school-based, systematic, bottom-up, school reform model as stated in the First National Education Act, B.E. 1999; the Office of the National Education Commission (ONEC), through the National Institute of Learning Reform, had launched the National Pilot Project, at the end of 2000. With the technical assistance from the Asian Development Bank (ADB), and finance from the Japan Special Fund, (THA 31358), school reform models developed by Thai educators had been carried on in this project. The main purpose of these models was to improve learner performance by means of helping schools directly to develop and implement their own whole-school reform model based upon the school strength on Master Teachers, National Teachers, Lead (Spearhead) Teachers and other school and community resources.

In these school reform models, learning process reform was regarded as the main thrust. In this regard, not only the students, but also the teachers, the principals, the school board, the parents as well as the people in the community were learners who should share and learn from each other by means of the self-professional development. The whole-school learning reform models to improve the quality of all learners, therefore, should consisted of four integrated components. The **first** one was the promotion of the self-professional development of the school personnel, through the usage of educational information technology, to be capable to reform the learning process, and perform an authentic assessment and classroom participatory action research. The **second** one was the promotion of the school-based management in order to encourage the collaboration and cooperation both from inside and outside the schools for learners' learning. The **third** one was the promotion and encouragement of the school personnel to be capable to practice an authentic assessment and school assurance in order to accomplish the sustainable and continuous development of the learners' quality. The **last** one was the recommendations for the researchers in the research and development teams (R&D teams) to apply their direct experiences from the National Pilot Study to develop their own responsible tasks in order to improve teacher education in their institutes. The school reform models in this study were the whole-school learning reform, integrated with a reform in staff development, a reform in teaching and learning assessment, a reform in classroom or participatory action research, school-based management, and quality assurance. The models, therefore, ensured accountability and cooperation of stakeholders, and thus provided better education to improve the performance of all learners and stakeholders in the school.

This report, one of the four reports of the National Pilot Study, focused on the assessment of the whole-school reform models for developing quality of the learners, with major emphasis on understanding the nature and the consequences of the efforts to implement the whole-school reform models. In addition, this report also seek to synthesize the successful

effort pertaining to classroom assessment and quality assurance as models that could be used as an alternative models for other schools.

Purposes of the Study

There were three purposes of the evaluation of the school performance based upon the school reform models. First, to study the initial status and the changes in the pilot schools to obtain the school reform models, especially in the learning assessment and quality assurance, that could be extended to other schools. Secondly, to study whether the implementation of the school reform models achieved its objectives as planned, and to study the extent of the effects and impacts on learners as results from the implementation of learning process reform, professional development, school-based management, learning assessment and quality assurance. Thirdly, to study the factors and conditions affecting the success of the performance of the pilot schools.

Scope of the Study

This report covered the assessment of the reform implementation based on the school reform models undertaking in the 250 pilot schools. There were three issues pertaining to the scope of the report that needed to be clarified. They were as follows:

Firstly was the scope of the consequent outcomes in the assessment. Normally the final, significant outcomes of the school reform were the development of the learners' qualities, and the changes of the school cultures. But, in this National Pilot Study, to study the learners' qualities and the school cultures seemed to be impossible or was rather difficult to accomplish because of the extremely short period of the National Pilot Study. Although the Study was in its third phase, but the phase for learning reform just only took one semester. Hence, in this report, the process and the intermediate outcomes, rather than the final outcomes, of the school reform were examined in the assessment process. The assessment was designed to collect longitudinal data to examine changes in the school reform in the following short-term period of process and intermediate outcomes. Staff professional development and the development results; students' learning and teachers' teaching process, and the students' learned characteristics based on the learning reform model; school-based management and its results; learning assessment process and its results; quality assurance and its results; lifestyles in school and opinions pertaining to school lifestyles. Moreover, the examination covered the whole picture of several designs of the school reform models

Secondly, in the study of the short-term period of changes in process and intermediate outcomes of this National Pilot Study, the examination focused only on the four dimensions of changes in accord with the school reform models. The first one was the quantity of changes. The second was the whole school characteristics of changes. The third was the consistency of changes among each of the three levels of schools (school level, authority or jurisdiction level, and geographical region level). And the fourth was the dynamics of changes in the school reform model. However, since the school reform models used in the pilot schools varied, therefore, the comparison across schools were considered less important than tracking the designs of the models in this report.

Thirdly was the scope of data. In this study, several research instruments were employed to collect the data for assessment. They were 8 sets of questionnaires, in-depth interviews,

focused-group interviews, observations, school visits, school plan reports, school progressive reports and school performance reports, reports of the R&D teams, and the reports of the regional follow-up workshops and the wrap-up workshops. However, since the last questionnaires had been collected in October and November where some pilot schools did not return the questionnaires, therefore in this report all the data analysis and the assessment results would be based upon the data received by November 20, 2001. Should there be more data from the return questionnaires, there must be changes in the assessment results.

Significance of the Study

The values of this study were at the collaborative and participatory evaluation used in the National Pilot Project. All stakeholders involved in this study would get benefits from the study as follows:

1. At the pilot school level, the principals and all teachers and personnel in each of the pilot schools would have clear understanding of and practiced school reform based on their whole-school reform model. As a consequence, there were changes in school lifestyles (school culture): both the learning process and professional development. After the accomplishment of the school reform implementation, each school would have adopted and adapted the school reform models and got the improved revised model that best fit to the school context. As a result of the school reform, each group of the stakeholders of the school would be empowered and capable to do their duties. The students in the pilot schools had learned happily according to the student-centered methods of teaching and learned more knowledge as compared to prior period. The teachers in the pilot schools were capable to reform the learning and teaching processes, and to conduct authentic assessment and classroom action research to develop the students' quality. The school principals were able to perform school-based management and provided the amicable supervision to speed up the school reform. All school personnel were able to conduct the quality assurance to assure the effective and efficient school reform.

2. At the R&D Teams' institute level, all professional educators in the R&D Team would have shared knowledge and learned empirically about the school reform process. They had a chance to apply the teacher education principles and theories with the teachers and the principals in the pilot schools, as well as with the other ONEC Teams and the consultants, and benefit from these direct experiences. They then were able to make use of what they had learned to better their duties in teacher institutes.

3. At the authority level, policy makers, educators and supervisors both at the provincial level and the ministry level, had experienced and had been assured of the alternative model of school reform. They could then apply, extend and speed up the reform in schools under their jurisdiction. New policies had been identified and implemented.

4. At the community level, all members of the school board, parents as well as the members of the community had more confidence in the pilot schools that all supports they gave to the school would be beneficial to their children studying in the schools. This situation then led to continuous and strong community-school involvement, which

would be an important instrument helping auditing the school performance in accord with the National Education Act 1999.

5. At the policy making level, the evidences of the school reform process based on the school reform models became clear and helped in an improvement of the policy setting and implementing on school reform.

2. Related Literature Review

Principles of School Reform

From the related literature on school reform, it had been found that school reform in western countries occurred because of multiple reasons. They were social and political forces, dissatisfaction with low achievement of students (Datnow, 2000), an effort to meet the need of student in the 21st century (Bodilly, 2001), and an educational transformation in accord with the shift from mechanical, positivist to organic, constructivist school of philosophy in education (Hartwell, 1996). There were five significance principles underlying the school reforms (Caldwell and Spinks, 1998; Riel, 1998; Soler, Craft and Burgess, 2001). The first one was the school reform through financial and academic assistance from external organizations. The second one was the school reform using school-based management with full decentralization of power at the school level. The third one was the whole-school reform where all personnel and stakeholders cooperatively and collaboratively worked together. The fourth one was the reform targeting at the students' learning and initiating by the teachers. The last one was the reform through the new approach of professional development of the school personnel where the teachers used research as a means and used all kinds of technology for self-development. Examples of prominent school reform programs were as follows. The Comprehensive School Reform Demonstration (CSRD) Program, consisting of 33 programs, in the United States (NWRL, 2000). The Beacon Schools Initiative run by the National Foundation of Educational research in England (Rudd, et al, 2000). And the Reform using School-Site Management and Budgeting in Australia and Hong Kong (Dimmock and Lee, 2000).

Factors Affecting the School Reform

There were two types of factors affecting school reform success. The first one was the theoretical factors obtaining from theories underlying the school reform model. They were theories of organizations and institutions, theories of attitude and motivation, educational administration theories, action theory, change theory and collaboration approach of cooperative working. The theoretical indicators consisted of the following indicators: organizational and personnel management, personnel attitude and motivation, leaderships, administration and supervisions, teaching behaviors and teacher performance, quantity and nature of changes in the process and performance, and intensity of collaborative performance (Caldwell and Spinks, 1998; Scheerens, 2001; Datnow, 2000). The second one was the factors obtaining from the real, practical world. They were background, process, learning and performance indicators of teachers, students, administrators, parents, officers from the education authority units or control units, and the local researchers working hand in hand with teachers to reform the schools (Datnow, 2000; Laboratory for Student Success, 2001; Gant, 2000).

Thai Educational and School Reform

Education reform in Thailand began in 1997 when the Office of Education Commission initiated the research project to document the educational reform in selected countries to provide foundations necessary for the drafting of the National Education Act, which was subsequently promulgated in August 1999. Then, the first and several national forums on educational reform had been organized through the cooperation of the Ministry of education, the Ministry of University Affairs as well as international organizations.

Besides the progressive work on structure and legislation conducted by the Education Reform Office (ERO), all organizations, both public and private, became aware of, tried to initiate and carry on the educational reform. The significant initiation for the reform of basic education in Thailand was the efforts to promote the concept of educational reform. Next were several activities to educate the relevant personnel at all levels and to encourage them to practice quality assurance, teaching and learning reform, school based management, and classroom action research. Among the variety of efforts, the pilot project to implement internal evaluation and quality assurance in 25 pilot schools across the country, supported by the Office of the National Education Commission (ONEC) in 2000, was probably the first success attempt in school reform. In the same year, efforts made by the Ministry of Education pertaining to quality assurance, portfolio assessment, and classroom action research in schools providing basic education, also ended up with similar results. Teachers, especially the responsible group, were burnt out because of a burden on the production of student and teacher portfolios, classroom research reports and a variety of instruments measuring indicators to be used to assess the quality of school based on the National Education Standards. The important lessons learned from the above school reforms were as follows. The school reform should be an integration of schools activities of learning reform, school administration and quality assurance. The assistance of the researchers acting as a mentor working with the school gave much confidence to the teachers in performing their reform. The school reform should be a bottom-up reform process. These lessons were then used as the foundations of the learning reform school models in this project.

Brief Summary of the National Pilot Study

In this National Pilot Study, the Office of the National Education Commission (ONEC) had been the executing agency for the technical assistance. The existing Subcommittee on Learning Reform chaired by ONEC had provided overall approval for the operation under the technical assistance. The Steering Committee and the Technical Working Group (TWG) had been formed by the Subcommittee to oversee the Pilot Project. Three international specialists had been recruited and charged with the responsibility of school reform policy, teacher education, and information technology in education, respectively. Four domestic consultants had been recruited and charged respectively with the responsibility of evaluation, decentralized management, assessment, and research and reform implementation.

Under the planned National Pilot Study, in December 2000, 250 pilot schools providing basic education were screened and selected from some 3,800 schools volunteered to

participate in this project. These selected schools represented a wide range of localities, authorities (jurisdictions), geographical localities, sizes and levels of education. At the same time, the 44 Research and Development Teams (R&D Teams) from the local universities, Rajabhat Institutes, and local educational supervisory units, were identified and assigned to team up with the pilot schools. Each R&D Team had been working with 3-6 pilot schools. Several ONEC Teams had been formed to assist both the R&D Teams and the pilot schools through information sharing and provision of relevant materials for self-learning and development. The National Institute of Learning Reform, with the assistance of other ONEC Departments, acted as a coordinating organization responsible for communication among the pilot schools, the R&D Teams, the ONEC Teams, the international specialists and domestic consultants, and the Technical Working Group (TWG).

The National Pilot Study covered three phases. The first one was the **Refinement of Student-Centered Learning Phase** (December 2000-April 2001). In this phase four Regional Workshops were organized for the R&D Teams, the administrators and the coordinators of the pilot schools, and the ONEC Teams, to discuss and share knowledge pertaining to variety of approaches to school improvement. The topics addressed in those workshops were student-centered learning process, authentic assessment, classroom action research, school-based management, and school reform. Besides the workshops, the pilot schools had received relevant materials for their teachers' self-study from the ONEC Teams as well as the domestic consultants. The R&D Teams visited the pilot schools and planned cooperatively to promote and carry on the whole-school reform. The second phase was the **Whole School Assurance of Learning Quality Phase** (May – October 2001). In this phase, two Follow-up Workshops and four Wrap-up Workshops had been organized to demonstrate, monitor, and evaluate the school reform process in the pilot schools. Moreover, there were several school visits by the R&D Teams, the international specialists, and the domestic consultants, and the continuous financial support and delivery of relevant materials and documents for personnel self-development to the pilot schools. At the end of the second phase, it was anticipated that all 250 pilot schools had been monitored and demonstrated variety of school reform approaches. The third phase was the **Networking or Scaling-up of the School Reform Phase** (November 2001 – May 2002). In this phase, each of the 250 pilot schools should be working collaboratively with maximum of 5-10 nearby partnering schools, on the volunteer basis.

As the second phase of the project had come to an end, based on the National Pilot Study, there should be an assessment of the Pilot Project. Since the school reform model used in this project was rather unique for each of the 250 pilot schools. That meant the models of those pilot schools, being a school-based, systematic and bottom-up model, were different according to the initial condition of each school in terms of readiness, capacity and facilities for the school reform. Therefore there should be a variety of the implementation of the school reform models. Moreover, in this National Pilot Study, there were many teams cooperatively and collaboratively involving in the reform process of the pilot schools. These teams had been working with the pilot schools differently both in terms of cooperation, ways and means of work, and the improvement procedure in the implementation cycle, based on P-D-C-A (Plan-Do-Check-Act) quality development cycle. (Each cycle start with P = knowledge sharing and cooperative planning, followed by D = collaborative working, C = participatory evaluation or assessment, and A = evaluation use for betterment through knowledge sharing). Hence, there was a wide range of the whole-

school reform, and dynamic reform models in this National Pilot Study. As a consequence, the assessment of the reforming process in this National Pilot Study had to be a participatory, multidimensional, multi-level assessment and had to be based on multiple sources of data and several key indicators.

Collaborative and Participatory Evaluation

The evaluation or the assessment (which would be used interchangeably) of school reform for this study was similar to the collaborative and participatory evaluation from literature (Aschbacher, 2000; Baker, Linn and Herman, 1996; Bray, Lee, Smith and Yorks, 2000; Calmer, 2001, Klein and Stecher, 2001; Land, 1997; Narayan, 1993). The main thrust of the assessment was that the assessment results should be learned and used to improve every activity in the school reform process. Therefore, in each of the pilot school, the assessment process should be planned and implemented at the beginning of the reform process by all stakeholders, and the assessment results should be discussed and used to adjust and redirect all activities. The assessment should be participatory, collaborative, and continuous process. The critical factors and the significant conditions critical to the success of the school reform, from the assessment results, should be used as a lesson to other pilot schools.

The assessment process for this study began with the identification of the objectives of the assessment, and followed by the identification and the development of the indicators, the construction of instruments for data collection, the longitudinal measurement to collect the data, the judgement, and the usage of the assessment results. All stakeholders must fully participate in every step of the assessment process. The process should be performed continuously as several assessment loops linking to each other. Each loop yielded the results useful for improving the activities in the next loop, on and on. All teachers and personnel in the pilot schools, as well as the R&D Teams and the domestic consultants should be engaged and involved in this assessment process.

In this study, therefore, the process of reviewing assessment results of each pilot schools had been arranged using several activities – such as poster session, group discussions, focus group interviews, and journal or diary writing in the regional workshops. It was, therefore, anticipated that there would be a change, a continuous and dynamic change in the design and performance of the school reform along a period of this study.

Conceptual Frameworks

The conceptual framework for the performance assessment based upon the school reform models was displayed in Figure 1. The left frame represented the initial status of the pilot schools; the middle frame represented the school reform models or the key intervention implemented in the pilot schools; whereas the right frame represented the consequences. In this picture, the school reform models consisted of four main tasks of staff development, the reform of learning process including learning assessment, school-based management and quality assurance. Generally, the quality assurance should be placed under the set of school management. But in this study, the school management had been considered as a task that required quality assurance in every steps of management; hence, it had been displayed within the umbrella of quality assurance.

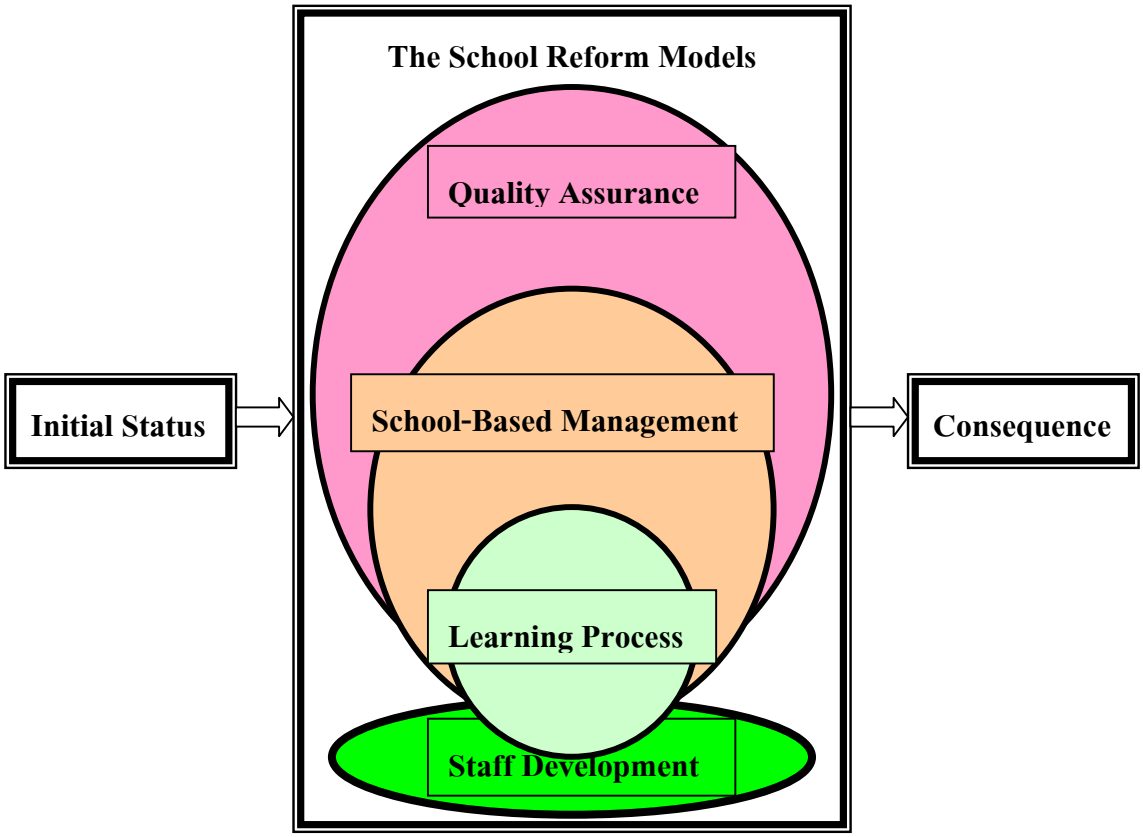

Figure 1 Conceptual Framework for the Assessment of the School Reform Models in the National Pilot Study

3. The Analysis of the National Pilot Study

The school reform models underlying the National Pilot Study were built up from the theoretical learning reform models and the grassroots-level specialization of the National, Master, and Lead (Spearhead) Teachers. In addition, they had been further designed to distinguish schools with the greatest needs for reform in order to be able to effectively support them, to promote the bottom-up, whole-school reform, and to encourage the participation of all stakeholders and create partnership. The appropriateness and the uniqueness in terms of the special characteristics, the accuracy, the conformity to the Thai culture and the feasibility of the school reform model underlying the National Pilot Study were presented as follows:

Appropriateness

The external appropriateness of the learning reform school project for developing quality of learners was quite high because the project was initiated at the right time where there was a great response to the educational reform movement. In the pilot schools, the principals were curious to become a change agent, and the school personnel were ready to learn and adopt the changes. The professors in the Rajabhat Institutes were interested in

and willing to participate in the National Pilot Study as the R&D Teams. And the authorities or the jurisdictions of the pilot schools would like to promote and accelerate the school reform.

The internal appropriateness of the project could be seen from the following two reasons. The first one was the consistency between the target of the National Pilot Study and the target of the authorities of the pilot schools. The bottom-up reform school models of this Study complemented to the situation where the top-down reform school models of the school authorities did not work. The models, being the alternative models based on the strength of the pilot schools and the community, and incorporated the mentor system to help supervising the schools, therefore, were quite promising to achieve the target. The second one was the comprehensive management of the National Pilot Study Project. There were 3 systems of project management: the coordination and financial administration system, the encouraging and promoting system, and the monitoring and evaluating system. Firstly, the Institute of Educational Policy, Plan and Standards worked as a coordinator between ONEC, ADB, international specialists and domestic consultants. The National Institute for Learning Reform was responsible for coordinating the 250 pilot schools, school personnel, the R&D teams, and the domestic consultants; and for administering and auditing the spending of the budget. Secondly, the R&D Teams were charged with the duty of school visits and provided supervisions, as well as encouraged and accelerated the school performance as planned. The National Institute for Learning Reform and the R&D Teams also checked the consistency between the school plans and the school performance. Thirdly, there were several levels of project assessment: self-assessment at the school level, assessment at the geographical region level by the R&D Teams, and the project assessment by the domestic consultants. These three systems, therefore, helped assuring that the school reform models would be implemented as planned.

Uniqueness

1. Special Characteristics of the School Reform Model

1.1 Integrated Tasks of the School Reform Model All teachers in the pilot schools were responsible for four integrated tasks. They were learning process reform for developing the quality of learners, the staff development on learning and assessment reform and classroom action research, the school-based management, and the school quality assurance. The teachers could carried on all these four tasks in steps similar to the steps in the P-D-C-A cycle for quality improvement, and could unified the first three tasks under the umbrella of quality assurance. These four integrated tasks underlying the school reform model, therefore, should be familiar to the teachers rather than a burden to them.

1.2 Whole-School, and Collaborative Implementation For the National Pilot Study, the whole-school and full collaboration of every teacher in the pilot schools was critical and was believed to be the mighty force driven the school reform to sustainable and continuous success. There must be full participation from all personnel, both inside and outside the schools, especially the school board, parents, local authorities, leaders, agency and organizations in the community, to contribute to learning in order to enable all learners sustained their learning and earned highest benefits.

1.3 Task Improvement through Research and Staff Developments In this National Pilot Study, staff or professional development had been assigned as the first task, because it was seen as a necessary and sufficient condition for school reform. Without professional development, the sustainable, continuous and genuine school reform could not be achieved. Based on the National Education Act, 1999, every teacher was encouraged to developed themselves through conducting classroom action research to improve their responsible tasks. Therefore, in this study all kinds of professional development activities were supported, especially the information-technology based activities, the self development, the knowledge sharing and discussing activities particularly with the Master, National and Lead (Spearhead) Teachers, and the professional development through classroom action research corresponding to the learning process reform. All the teachers in 250 pilot schools were stimulated to use, and encouraged to employ innovative activities, proven methods for developing learner quality based upon effective practice and research.

1.4 Bottom-up, and School and Community-Context Based reform Even though the school reform models in this National Pilot Study were quite unique in its principle and policy, the implementation was diverse greatly. Each of the pilot schools was encouraged, on their own judgement, to make a choice, plan and extend the central models of school reform and adapt the model until the model fit to the context of the school and the community.

1.5 Knowledge Sharing The Office of National Education Commission (ONEC), being aware that the school personnel was confused at the initial stage of school reform, had designed the National Pilot Study to promote knowledge sharing. The R&D Teams were assigned to be a mentor, facilitator and an amicable supervisor for the pilot schools. The Master, National and Lead (Spearhead) Teachers were assigned to be resource persons in the schools. The coordinating teachers were assigned to participate in the regional workshops and extend the learned knowledge to other teachers. Several activities were organized for knowledge sharing among schools personnel, the R&D Teams, and the domestic consultants. There was ample evidence that the amicable (*Kalayanamitr*) supervision, and knowledge sharing were significant instruments for creating changes in behavior, working culture, and ways of life of every group of personnel. Teamwork, cooperation and learning from each other would make school personnel having good understanding and better relationship. These designs of the R&D Teams as the amicable supervisors, moral supporters, and monitoring agent, and several knowledge sharing activities, in this study, were an innovation for school reform.

These 5 special characteristics of the National Pilot Study were unique characteristics. From the literature review of school reform undertaking in other countries (Bodily, 2001; Kansas City Kansas Public Schools, 2000; Klein and Stecher, 2001; U.S. Department of Education, 2000), a variety of school reform models had been developed and implemented. Some of the models were comprehensive and integrated several components similar to the models in this study. But none of them employed the bottom-up, volunteer, and integrative process of the reform as in this study.

2. Academic Accuracy

The school reform models in this study were in accord with academic theory in three aspects. Firstly, the school reform might be introduced to the schools by the school

authorities, but the decision to participate in this study had been made voluntarily by the schools. As a consequence, the school personnel were likely to accept the innovation. Secondly, there were financial and technical supports to facilitate the teachers in sharing knowledge from each other, from the R&D Teams, in conducting classroom action research to learn intellectually, and resulted in changing their behavior. Thirdly, the staff development process did not limit only to the learning reform process, but extended to all kinds of the teachers' responsible tasks to enable them to know, and be capable to find their way to develop themselves and worked collaboratively in teams. It could be said that the school reform models in this study were academically accurate.

3. Conformity to the Thai Culture

The conformity of the school reform models in this study to the Thai culture was quite remarkable. In the first place, the model guidelines promoted the school reform based on the strength of the school and the community, the demands of the parents and all stakeholders. In the second place, the school reform model had been designed to conform to the Thai culture, the context of which was quite different to the western culture. There were four reasons supporting this statement. Firstly, Thai society was a bureaucratic one, and the schoolteachers were used to follow the command without using their own ideas. Most of the teachers disliked and lacked confidence in making decisions. Genuinely, teachers were quite independent, loved freedom, and would like to make their own decision. However, according to the bureaucratic and Thai culture, they were expected to do everything without resistance. As a consequence, their genuine attributes were pressed and they tended to resist and reluctant to follow the command of the authority. The school reform models in this study did not give any order, but provided alternatives, and information for the group dynamic in schools driving the teachers to make their own decisions. In addition, the school reform models focusing on student-centered learning was in accord with the attributes of the young generation, and resulted in happy and joyful learning.

Secondly, Thailand was a highly collective and cohesive culture, where people tended to follow the group norms, rather not to be alienated from the group. Thai people loved to share responsibility, happiness and sorrows among friends, and they were willing to work wholeheartedly for the group. These characteristics fit to the collaboration in the school reform model where all schoolteachers worked and took the consequences collaboratively.

Thirdly, Thai people were quite conservative and followed the traditional ways of life. They tended to decline, and were hesitated to accept the changes and innovations. They need encouragement and strong support to adopt innovations. The Thai culture was agreed to the strategy of the R&D Team and the National, Master and Lead (Spearhead) Teachers as the moral supporters and amicable supervisors in this study.

Fourthly, Thai people loved happiness, easy going, hated hard working, struggling and changes. These attributes would be tenable because all the four integrated tasks in this study were the exact same routine tasks, and the teachers could gradually improve their work on their own pace. Moreover, the school reform model started with the only task of learning reform process. Had the model been starting with all four integrated tasks, there would be less success. Lastly, Thai people tended to be fear of loosing face, and not meeting the group's expectation, and love to be accepted by groups. The school reform

model allowed the pilot schools to be accepted by colleagues and community, as one of the schools under the ONEC project. Consequently, the teachers had more incentives to reform and maintain the status of the leading pilot schools.

4. Feasibility

The school reform model based on the National Pilot Study was feasible because of the following two factors and nine conditions. The first factor was the consistency between the intervention of school reform and the teachers' needs, ways of life and culture. Teachers approved and gave high regards to the process and products of the school reform. The second factors were personal and school factors. The principals, teachers, students, and parents who had clear understanding and knowledge of school reform, changed their behavior and geared to the success of reform. Schools that had adequate financial and personal resources tended to be succeeded in reforming the school.

Nine conditions affecting the success of school reform were as follows: First, the school principal accepted the school reform mission. Second, the school reform process started from a group of only few teachers who worked collaboratively to reform. The capability of this group would accelerate the reform mediating through an extension to other group of teachers. Third, the school plan was written with clear objectives, process, time schedule, and approved by all stakeholders. Fourth, schoolteachers were allowed to meet formally and informally to share knowledge and learn from each other, without disturbing class schedule. Fifth, there was teamwork culture where everybody listened and paid respect to each other. Sixth, there was a utilization of all possible resources, especially a utilization of human relationships among teachers. Seventh, verbal communication, particularly in knowledge sharing meetings, was an important means driving to the performance success. Eighth, there was continuously and systematically monitoring and evaluation. Ninth, there was a full and perfect use of evaluation results in an improvement of tasks. Since the school reform model satisfied all these nine conditions, the reform success thus was feasible.

4. Research Methodology

Evaluation Framework

The significant gist of the evaluation was the study of the initial status, the analysis of the changes in the school reform model and the use of the evaluation results to improve activities in the school reform process. The evaluation frame consisted of 16 evaluation indicators and 105 sub-indicators, pertaining to four integrated tasks based on the National Pilot Study. There were two evaluation criteria for every evaluation issues. The first one was the evaluation of change criterion. The changes in school reform process and outcomes would be considered to occur only if there were significant differences between the two measures of indicators, and there were at least 15 percent increments between the two measurements. The second one was the whole-school reform criterion. The reform would be a whole-school reform only if there were 80 percents of the respondents scoring above 80 percent of the full score.

Population and Sample

The population of this project consisted of all personnel in the schools providing basic education in Thailand, the educators working in teacher education institutes or Local Education Authority Units. The first group of sample, consisted of 250 principals, 7,444 out of 10,094 schoolteachers and personnel, 6,584 grade 6 and 9 students (one class per grade from each school), 6,653 parents and school board in the 250 pilot schools. The second group of sample, some being invited and some being selected and screened under the voluntarily basis, consisted of 44 R&D Teams (a total of 105 researchers from Rajabhat Institutes, Universities, MOE and Private Organization). The third groups consisted of 25 ONEC Team and 40 officers or representatives from the school authority units at the central and regional levels.

Data

Two kinds of data were used in this study. The quantitative data consisted of three data sets. A) 29 composite indicators pertaining to the process and outcomes of the National Pilot Study, obtaining from the questionnaires. B) Data pertaining to the characteristics of the principals, the teachers, the students, the school and the community. C) Data pertaining to the school plan and performance reports, and data pertaining to school finance and expenditure deriving from the questionnaires. Qualitative data covered the following information. A) The information pertaining to the details of each components of the school reform model. B) The changes of the school reform model. C) The key informants' opinion pertaining to the success and the consequence of the reform. D) The conditions and factors affecting the success of the school reform. E) The future of the school reform.

Instruments and Data Collection

Several research instruments were used in this study. The three sets of questionnaires were the main instruments to collect quantitative data twice from the principals, the teachers, the students, and the parents and the school board. The indicators obtaining from the questionnaires indicated high reliability ranging from 0.704-0.955, and displayed construct validity through a test using known-group technique. All four domestic consultants, the ONEC specialist and the Director of the National Institute of Learning Reform shared ideas in identifying and defining the indicators, and drafting the questionnaires. The drafted questionnaires then were criticized by the R&D Teams and the key personnel from the pilot schools during the workshop, and refined. They then were sent to the pilot schools either by mail or by hand. The next set of instruments consisted of recording and coding forms constructing for recording data from the school plans and performance reports in the first and second phases. Next were forms recording qualitative data extracted from the following data sources. They were 44 research reports of the R&D Teams, the minutes of the four Regional Workshop Meetings, and six Regional Wrap-up Meetings, journals of the National and the Master teachers, 3-page questionnaire for the principals, field notes from school visits, in-depth and sixteen focused group interviews. The instruments or data collection techniques used in this study were displayed as follows:

Table 1 Research Instrument and Data Collection Techniques

	Respondents/Informants					
Instrument/technique	Principal	Teacher	Parent & School board	Student	R&D team	O N E C team
Questionnaires	✓	✓	✓	✓		
School plans, final reports	✓	✓			✓	
R&D Teams report					✓	
Journal writing		✓				
3-page question form		✓				
Observation	✓	✓	✓	✓	✓	✓
16 focus-group interviews	✓	✓	✓		✓	
In-dept interviews	✓	✓	✓	✓	✓	✓
School visits	✓	✓		✓		
Regional workshop reports	✓	✓	✓	✓	✓	✓
Communications	✓	✓	✓	✓	✓	✓

Data Analysis

There were three steps in data analysis. The first one was the analysis of the initial status using descriptive statistics and content analysis. The second step was the analysis to evaluate the National Pilot Study employing the assessment of effectiveness, whole-school collaboration, equality, dynamics, and the explanation of the success by studying the conditions and factors affecting the reform success. Quantitative data analysis used statistical comparison between the reform process and outcomes and the evaluation criteria, the comparison of indicator means and variances among the geographical regions and the school authority units, hierarchical linear model, analysis of variance, multiple regression analysis, and structural equation model. Content analysis was mainly used to analyze and synthesize qualitative data. The main purpose was to derive the exemplar of the learning assessment model and the quality assurance model successfully implemented in this study. In addition, the content analysis of the qualitative data gave supports compliment with the result of quantitative data analysis.

5. Research Findings

Initial Status of the Pilot Schools

1. General Data In this National Pilot Study, the pilot schools was classified based upon their control units (jurisdiction). The six control units consisted of the Office of National Primary Education Commission (ONPEC), the Department of General Education (DGE), the Office of Private Education Commission (OPEC), the Education Institute, Bangkok Metropolis, the local Municipality, and the Royal Patrol Police and the Department of Religion. The proportions of the pilot schools under those six control units were 56.800, 29.200, 5.600, 2.000, 5.200 and 1.200 respectively. Comparing to the whole country proportion in the year 1999, it was found that schools under ONPEC had a little lower proportion, schools under DGE and Municipality had a little higher proportion than the

national proportion of schools. The pilot schools scattered all over the school authority units and 55.200 percent were small schools.

2. Physical Status The school environment was quite fresh and beautiful. There was good water supply and healthy food. Of all school principals, 35-40 percent reported that the physical status was moderate and 42 percent reported the status as very good. Concerning school buildings, canteen, library, and instructional media, 45-50 percent of the principals reported as moderate. From the school visits, most of the rural schools under the ONPEC and the Royal Patrol Police in the Northeast, were small, and had an arid and dry land.

3. Human Resources In average, the pilot schools had 902 students, with a minimum of 40 and maximum of 4,472. Of all principals, 49.20 percent had been awarded good performance, golden SEMA, and other awards, 61.20 percent held bachelor degree or higher. The mean age was 47.62 years, the mean years working in this school was 6 years. Of all pilot schools, 21.200 percent had Master and National teachers. Approximately 93 percent of the teachers graduated with bachelor degree. 67.600 percent were female. The mean age of the teacher was 42 years, the mean years working in this school was 11 years. The pupil teacher ratio was 19.973 in average.

4. Implementation of the School Reform Approximately 10 percent of the pilot schools had begun implementing school reform. They were 12 schools under ONPEC, 8 schools under DGE, 2 schools under OPEC, 3 schools under the Municipality. Most of the pilot schools were in the stage of awareness and did not initiate any systematic school reform.

4.1 Learning Process and Organization Principals, teachers and students perceived that there was a little progress in the reform of learning process. The means of those indicators measuring the organization of learning process ranged from 2.60-3.20. Some teachers had just started inquiring the guidelines for improving the student-centered learning process.

4.2 Authentic Learning Assessment The research finding indicated that there were some training workshops on authentic learning assessment, but teachers did not practice much. The means of indicators measuring the performance on authentic assessment of learning process ranged from 2.342-2.727. The activities that teachers practiced less were student evaluation, whole-school evaluation, and evaluation use.

4.3 Staff or Professional Development Most of the staff development activities were participating with the training workshops, sharing knowledge activities, and team working. The activities that had been practice less were research-based improvement of work, friendly supervision and mentor, and creative thinking.

4.4 Classroom Action Research Even of the full supports from the school authority units, the means of indicators measuring performance on classroom action research ranged from 2.077-2.689. Teachers needed additional workshop, and many of them were willing to pay for the tuition fee. The activities that had been mostly done were lesson plan writing, recording problems, the trial of ways and means to solve the problem. The activities that had been done only a little, were whole-school action research, use of research result, and synthesis of action research.

4.5 School-based Management Every pilot school had attempted to decentralize the administration power at the school level. The activities mostly done were participation in school planning, job assignment and evaluation. The activities less done were decentralization of power to every teacher. Only 23 percent of the pilot schools employed the strategy of small schools in one, the administration by grade, or the administration by groups of classrooms.

4.6 Quality Assurance The means of indicators measuring the performance on quality assurance ranged from 2.318-2.937. The activities mostly done were self-evaluation, and evaluation use. The activities less done were using P-D-C-A cycle in routine duties, the continuous and systematic assessment of self and peers, and the participation in the SWOT analysis to uncover the strength and weakness of the schools.

5. Qualitative Data Analysis Results The analysis results of the qualitative data obtaining from the in-depth and focus group interview, indicated several issues clarifying the initial status of the pilot schools as follows. **First**, although many schools had begun the school reform, there was a slow movement and only a small group of teachers were involved in those activities. **Second**, even though the schools had undergone practicing quality assurance, the teachers still lacked confidence of what they had been working on. The suggestions from authorities, sometimes, were inconsistent and made them more confuse. They did not see the linkage between the school quality assurance and their duties on teaching and learning. The school meetings were to inform what the teachers had to do rather than the meetings for consulting and knowledge sharing. Expected hard working and big workload, together with the insecure feeling under the implementation of the professional certificate in the near future, made them feel burnout and unhappy, and many of them started thinking of early retirement. **Third,** the staff development process seemed to be beneficial only to the teachers who had been assigned to participate in the training workshop. When that teacher came back to school, there was no drastic change in school. Most of the teachers still carried on the traditional way of instruction and assessment, emphasizing memorization rather than critical thinking. **Fourth**, the Mater teachers and the National Teachers were recognized by the teachers from the other schools rather than by the teachers in their schools. Very few colleagues of them paid attention to the techniques used by the Master and the National teacher. But other schools frequently invited them to be a resource person for learning process reform. In conclusion, the ways of life in schools seemed to have no real significant changes as compared to the period before the promulgation of the national Education Act, 1999.

The Results of Project Evaluation

In every pilot school, the decision to participating to the National Pilot Study and adopting the reform arose from the school principal or his assistance. The school reform process started with the principals' changes in behavior, getting a small group of teachers involving the reform movement. After a while, the power of this group as a promoter of school reform influenced every teacher committing to the school reform. The evaluation results of the performances leading to the school reform success were as follows:

1. Performances Effectiveness

1.1 Quantities of Changes There were statistically significant changes in the indicators measuring four main tasks, namely: learning reform, professional development, school-based management, learning assessment and quality assurance. The quantities of changes, as compared to the first measurement-the base-line data, were 20-50 percent for the principal group, 10-30 percent for the teacher group, and 10 percent for the student group. The indicators indicating the least change were teachers' belief and faith, teachers' ethic, students' ethics, students' background, learning process and products, evaluation results, and quality assurance. The data analysis indicated that the quantities of changes in all 29 indicators were higher than the criteria of 15 percent increments. The interpretation, therefore, was that the school reform had been success as planned.

1.2 Teachers' Perception of Change Comparing among groups of personnel, there were statistically significant differences in the perceived changes. The administrator group had higher means of perceived changes in almost all indicators than the teacher group and the student group.

2. Whole School Collaboration

The coefficients of variation (CV) measuring variations in post-measurements were lower than pre-measurement in almost all indicators. It implied that the National Pilot Study had made the personnel's opinion coming closer as compared to the situation at the beginning of the Study. This finding had been confirmed by the results of the assessment of the indicator of 'the number of schools/the percentages of whole-school reform' ratio whether the indicator exceeded the criteria of 80/80 or not. The pilot schools, whose indicators were above the 80/80 criteria, had greater number in post-measurement as compared to the pre-measurement. When listing the indicators indicating the high level of whole school collaboration, there were 66 schools (26.12 %) under the school-based management; 56 schools (22.67 %) under the students' learning process; 54 schools (21.86 %) under the staff development; 52 schools (21.05%) under the teachers' morale. These results indicated that even of the small number of schools achieving whole-school reform, but the increment rate of achieving the whole-school reform was approximately 20 % of which was quite high during the short-period, first two phases of the national Pilot Study.

The usage of only one indicator of variation to measure the whole-school collaboration was rather incomplete, because there might be some schools having low values of both indicator mean and variation. Using both indicator mean and variation provided more complete information pertaining to the extent of whole-school collaboration. Hence, to get a clear picture of whole-school reform in all pilot schools, the mean and standard deviation of the composite indicator measuring school reform were used as two axes dividing the scatter diagram of all pilot schools into 4 quadrants (groups) as shown in Figure 2. The **first** group was the low achieved, and less-than whole-school reform schools (indicator means $\leq$ 2.745, standard deviations > 0.303). On the contrary, the **fourth** group was the high achieved, whole-school reform schools (indicator means > 2.745, standard deviations $\leq$ 0.303). The **second** and **third** groups were moderately achieved reform schools, as compared to the first and the fourth groups. The research results showed that at the beginning of the National Pilot Study, there were 65 and 56 schools (27.197 and 23.431 %) in the first and the fourth groups respectively. At the end of the second phase of the Study, there were more pilot schools having success in their whole-school reform efforts. The

number of the first group schools decreased to 2 while the fourth group schools increased to 136 (56.904 %), indicating 2.4 times increment in number.

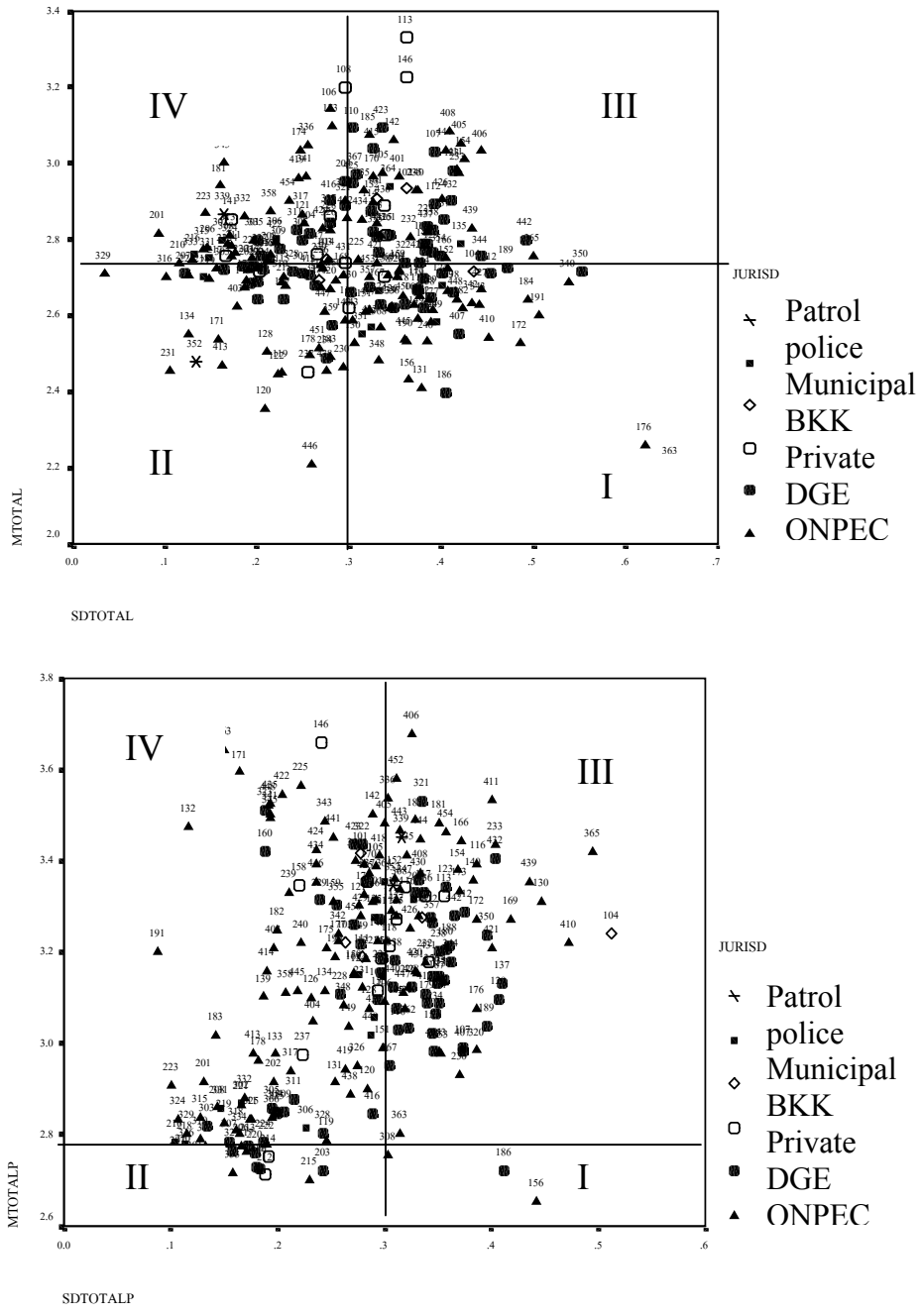

Figure 2 Scatter Diagram Indicating Indicator Means and Standard Deviations of the Pilot Schools from the Two Measurements

Based on the evaluation conducted by domestic consultants and The ONEC research team, there were 67 out of 250 pilot schools (26.800 %) that could not provide significant

evidence of school reform progress. The major explanations of the slow progress or no change in these schools were their late participation, the problem pertaining to the resign or change of the R&D Teams, and the communication problem. Of the 183 remaining pilot schools (73.200 %), there were ample evidences supporting concrete and vivid progress and changes in all schools. There were 124 schools made progress only in some of the four integrated tasks, whereas 59 schools demonstrated reform success in all four integrated tasks as planned in the National Pilot Study.

3. Equality in School Reform Performance

Equality in school reform performance among groups of pilot schools was documented using the evidence of testing differences among indicator means of those groups. Almost all indicators had their means significantly differences among school groups of different size, and among schools within each control unit and each geographical region. But there was no significant difference of indicator means among local units and geographical regions. In addition, it was also found that there was higher inequality in pre-measurement indicators as compared to the inequality of the post-measurement indicators. This finding signified that the school reform performance in the National Pilot Study partially helped reducing inequality among schools. The analysis to confirm this finding by means of hierarchical linear model (HLM) analysis revealed that the composite indicators measuring school reform performance had approximately 7-25 % of variation among schools within each control unit, and 75-85 % of variation among schools within each geographical region. The analysis results thus displayed the variation among schools was the consequence of the variation in school size within each control unit.

4. Dynamics of Changes

4.1 Changes in Working Ways of Life The information retrieving from the two school plans and 2 progress reports from each of the pilot schools, the in-depth interviews and the 16 focus group interviews, yielded evidence supporting that there were changes in the ways of life in every pilot school. Teachers came to school early, kept working and continued working after the end of school day. They enjoyed working and paid much attention on their work. Most of them collaboratively and cooperatively worked with their colleagues. Those who would like to go home early would rather felt guilty and were reluctant to do so. This scenario was quite different from the one at the beginning period of the National Pilot Study. In addition, there was an increase in the number of consultation meetings, both formal and informal, in every school. Most of the meetings were small group consultations that took places in any time and location. Teachers were getting more acquainted to their colleagues, alert to listen and learn, and ready to share new information and messages. The National, Master and Lead (Spearhead) Teachers reported that they were recognized and accepted more and more and played an important role in their school reform.

4.2 Changed in School Plan The two school plans and 2 progress reports from each of the pilot schools, indicated changes in school plan. The first plan focused more on staff development, while the second school plan and the progress report focused more on evaluation and quality assurance. The proportion of the pilot schools that having evaluation and quality assurance success, increased from 13 % to 82 %.

4.3 Characteristic Changes of the R&D Teams Members of the R&D Teams had learned, applied and empirically witnessed the following issues. They were '*the assistance to the pilot school through the amicable (kalayanamitr) supervision. Uses of kind mind, and wholeheartedly working, to accelerate the growth of grass to be a great bamboo tree. Practice the principle of simplicity is the best. Employ holistic view of school and give recommendation for schools to be aware of the use of valuable local resources and culture to enable all learners to have happy learning. Allow the school to help themselves with cooperation and knowledge sharing with schools in both thinking and doing. Helping schools to integrate the four main tasks of learning process reform, professional development, school-based management and quality assurance'*. The R&D Team members became involved more with the schools as compared to the situation at the beginning of the Study. They, in turn, were able to apply their learning and related theories to develop and improve their work in their institutes.

5. Factors and Conditions Affecting the Success of the Project

From the results of multiple regression analysis, it was found that there were seven variables significantly affecting the post-measurement indicator of the project success, which was used as a dependent variable. Those variables were as follows. The pre-measurement indicators of the principal's process and product, the pre-measurement indicators of the teacher's process and product, the pre-measurement indicators of the students' learning process and outcomes, the pre-measurement indicators of parental participation, the principal prestige, school size and proportion of the National, Master and Lead (Spearhead) Teachers. These seven predictors accounted for 54.200 % of variation in the dependent variables. The effects of the principal's process and product indicators were twice as high as the effects of the teacher's process and product indicators, and the students' learning process and outcomes. The issues worth mentioning, were the insignificant effects of following independent variables. They were number of the R&D Team members, student-teacher ratio, student enrollment, the number of teachers, teachers' age and gender, the principal's qualification, teachers' mean age, marital status, and being female.

The results of the structural equation model (SEM) analysis to estimate the causal relationships among indicators, revealed that the theoretical model was valid and fit to the empirical data (chi square = 32.920, degrees of freedom = 19, p = 0.024, RMSEA = 0.055, GFI = 0.970, RMR = 0.005). Variables in the model accounted for 52.000 % of variation in the latent variable of the project success. The significant factors affecting the project success were all three latent exogenous variables of the principal's and the teacher's performance process, and the students' learning process. The factor loading of the observed variables indicating the latent factors of the principal's and teacher's performance process, were twice as high as the loading of the variables indicating the latent factor of the students' learning process. The total effect of the reform process on the reform success was 0.530, which was rather high. The school size and the number of the National and Master teachers had statistically significant effects on the project success.

The results of the analyses of qualitative data also signified that the principals had clear vision on school reform, and practiced school-based management. Academic and financial supports provided by ONEC, academic consultation and mentor of the R&D Teams,

teacher collaboration, and the supports from the local units, were practically important factors drove the pilot school to achieve the planned reform success.

In conclusion, these positive changes, effectiveness, equality, and whole-school reform success, which had been reached within a short period of 6 months in the National Pilot Study, signified that the school had performed efficiently, because the project success was quite satisfied using only approximately 740 Baht expenditure per student.

The Synthesis of Evaluation and Quality Assurance Models

In spite of the similar support given to every school by the ONEC National Pilot Study, there were different models of evaluation and quality assurance developed by the pilot schools because of differences in the school context, the initial status, the potentiality and teachers' readiness. Based on the synthesis of the developed models, three evaluation models and four quality assurance models emerged as follows:

1. Authentic Evaluation Models

The authentic evaluation models developed by the pilot schools were quite similar in form with respect to the evaluation concept. The activities conducted in each evaluation step did not deviate from the conceptual evaluative steps. Hence, the authentic evaluation models could be differentiated only in terms of the completeness dimension and the dimension of the integration with other school reform tasks. There were only three models, because the fourth one: the incomplete and integrated with other task, model was not applicable.

1.1 Complete, and Integrate Model of Authentic Evaluation Teachers in the pilot schools who developed this model, knew and clearly understood the authentic evaluation principles, They were effectively and efficiently capable to design, plan, implement, share, and use evaluation results to improve any responsible tasks.

1.2 Complete, but Non-integrated Model of Authentic Evaluation Teachers in this group could be able to design, plan and implement, but, separately carry on the school quality assurance. Quality assurance model was considered to be a separate special task, not related to any other tasks, and was not perceived as being a means to an end in the teaching and learning process. The special committee was set up to take care of evaluation. Teachers perceived that the important evaluation use was a judgement of pass/fail, and still depressed on the idea that learning evaluation was a big workload of the teachers.

1.3 Superficial Authentic Evaluation Model (An Incomplete, and Non-integrated Model of Authentic Evaluation). Teachers in this school group were still lack knowledge and understanding of evaluation concept. They practice evaluation without clear understanding of the evaluation principles. Teachers followed commands rather than created their own model. They still suffered and had a lot of problems in constructing evaluation instruments. They did not have faith in the credibility of evaluation results, did not accept the evaluation results, and therefore, they were hesitated to use evaluation results.

2. Quality Assurance Models

The quality assurance models, developed by the pilot schools, had similar characteristics and had the same steps to the conceptual quality assurance system which consisted of quality system, quality control system and quality assessment system. Hence, they were different only in the two dimensions of conceptual completeness and integration. Using these two dimensions as two perpendicular axes, all the quality assurance models could be divided into four groups as follows.

2.1 Ideal Quality Assurance Model This model represented a complete integration of quality assurance academically and collaboratively. Teachers understood the meaning, and were capable to collaboratively carry on the school reform. Quality assurance tasks, therefore, had been integrated and merged with learning process reform, school-based management, classroom action research, and staff development. There were developed activities and cultural changes, which were enable and facilitated in all kind of teachers' work, and consequently resulted in an improvement of students' quality.

2.2 Complete, but Non-integrated Quality Assurance Model Schools in this group followed every step in conducting quality assurance. Those steps were. Development of school charter, standard setting, specification of indicators and variables, data collection and analysis, development of school plans, plan implementation, school evaluation and use of evaluation results for improvement in all aspects as planned by ONEC or the control Unit. There was no difference in degrees of whole-school collaboration among schools, but there was great difference in terms of integration. Of all pilot schools having perfect collaboration, some schools set several committees each of which to be in charge of taking care of one standard, some schools assigned one teacher to take car one standard. Later on, all these separate tasks would be synthesized. However, in this model, not every teacher in the pilot school could get a clear picture of the students' quality, because the educational standard had been torn apart among committees or teachers. Many tasks were redundantly replicated. The pilot schools used different numbers of educational standard, depending upon different control units of the schools. There were 14, 16, 26 and 28 standards based upon different quality assurance models: namely, ISO, four types of quality assurance (assurance for opportunity, efficiency, safety and quality) that had been developed by each of the school control units. Because the tasks of quality assurance were separately assigned from other tasks, the teachers felt that quality assurance was hardworking, an extra incremental load topped over leaning and teaching. As a result, teachers were burnt out, depressed and were afraid of the evaluation and quality assurance.

2.3 Ongoing, Corrected Model of the Quality Assurance Based on the National Pilot Study Many pilot schools perceived and understood the corrected way of performing internal quality assurance, but they were hesitated and quite slow in their performance. Hence, their quality assurances were in progress, but not complete. Some schools were in the stage of evaluation and identification of their strength and weakness, while other schools were in the process of data collection.

2.4 Incomplete and Non-integrated Quality Assurance Model A few pilot schools followed every steps in quality assurance process without clear understanding and awareness of the logic underlying the process. They focused on providing evidences, reports rather than using quality assurance results to improve the their works. Some pilot

schools copied other school's self-study reports, without empirical performance. Teachers in those schools, therefore, had a load of paperwork without any benefits from misled quality assurance.

Recommendations

Policy Recommendations

1. Every school control units should collaborate and coordinate with ONEC to extend the National Pilot Study to the remaining schools throughout the country. The National Project should be launched, through the amicable supervision of the pilot schools, and the R&D Teams from the Teacher Education Institutions. Certain significant activities should be institutionalized: for example, a curriculum to provide information pertaining to school reform, exemplar of the success pilot schools, guidelines for adapting the school reform models to fit to the school context.

2. The Head Office of the School Reform should be established and charged with the duties of analyses, syntheses and research about school reform models; provision of texts, manuals, aids, information and communication technologies that could be disseminated effectively, and thoroughly throughout the country.

3. The school control units, and ONEC should coordinated with, and inform the Office for National Education Standards and Quality Assurance (ONESQA) about the new models of school reform, so that ONESQA could revise the instruments and techniques used for external evaluation to handle the broad range of profound school reforms.

Recommendations for School Reform

1. Being an ongoing project, at present in the third phase, the assessment of the National Pilot Study, therefore, was also essential instrument for the study. Every steps of the assessment process ought to be an integral part of the study, including full participation of all stakeholders. The assessment results should not be and end, but should be rather a means to yield relevant, appropriate and useful information for change and improvement of the school reform models for the pilot schools.

2. Based on the school reform models, the authentic learning assessment and the quality assurance must be fully integrated with every significant activities of school reforms, Teachers must be capable to evaluate, use evaluate results, and assure the quality of their responsible tasks both at the individual and the school levels.

3. The key concept of evaluation is the use of evaluation results to improve any activities in the school reform process. Therefore, every school should begin to plan the school evaluation at the same time they begin to plan the school reform. All personnel should participate in every step starting from the planning stage, the plan implementation stage, the evaluation stage, the discussion and learning from the evaluation results, the use of evaluation results in improving the school activities. The evaluation process should be a participatory, collaborative and continuous one.

4. All school personnel should have been aware of, clearly understood, and have the opportunity to attempt to reform the school by themselves, so that they could achieve and change their ways of life (school culture). Consequently, there would be a change in their learning techniques and professional development, in their methods of working and problem solving and in the increase of their work efficiency and quality. The self-learning process can be achieved only through knowledge sharing, authentic assessment, classroom action research, and quality assurance. The principals, teachers and school personnel in the pilot schools should have experiences in cooperatively teamwork, be capable of collaboratively improve their work, and be able to organize the network of their colleagues and do not individually work under any command.

5. Regarding the significance of supervision and monitoring to the school reform and teacher education, there should be an accelerated, further development of the amicable (Kalayanamitr) supervision, to stimulate and promote the teacher production, teacher development and school reform.

6. Regarding school network, knowledge sharing among schools within, and across the school control units, should be promoted for mutual understanding, for the extension of the horizon of the state of the arts, and for the development of the equality of school standards among institutions, and among the school control units.

7. Regarding parental and community involvement, the situation that the school board, parents and community people had the faith and confidence in the pilot schools, should be exploited and gradually evolved to be a useful mechanism for the provision of basic education. That meant, the stakeholders outside the school should be encouraged to play significant role to evaluate the school performance in the external evaluation process, and to assume the responsibility as the owner of the school and took care of the investment in basic education.

Recommendations for Further Research

1. Regarding the short period of this study and the limitations of no standardized test to evaluate the learning outcome, it is recommended to further the continuous assessment for these 250 pilot schools with a better evaluation model and instruments.

2. Regarding to the changes in the Thai teachers' working culture and ways of life in schools, there should be a further study pertaining to those changes in order to clarify the conditions and the causal factors of changes for an improvement of the appropriate school reform.

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