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TEACHER DEVELOPMENT FOR QUALITY LEARNING

The Thailand Education Reform Project

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ACRONYMS USED IN THIS REPORT

ADB	Asian Development Bank
LEA	Local Education Authority
BMA	Bangkok Metropolitan Administration
CSC	Civil Service Commission
DGE	Department of General Education
DVE	Department of Vocational Education
EMIS	Education Management Information Systems
FOE	Faculty of Education
IC	International Consultant
IPST	Institute for the Promotion of the Teaching of Science and Technology
LC	Local Consultant
MOE	Ministry of Education
MOF	Ministry of Finance
MUA	Ministry of University Affairs
NECTEC	National Electronic and Computer Technology Center
OECD	Organisation for Economic Co-operation and Development
OER	Office of Education Reform
ONEC	Office of the National Education Commission
ONES	Office of National Education Standards.
ONPEC	Office of the National Primary Education Commission
OPEC	Office of the Private Education Commission
ORIC	Office of the Rajabhat Institutes Council
TERO	Teacher Education Reform Office

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CHAPTER 1 INTRODUCTION

1.1 Introduction

During the past two decades, Thailand has undergone a rapid transformation from a predominantly agriculture-based, government-subsidised economy to an emerging industrial, market-driven economy. To sustain the growth and development of a market-driven economy, new types of knowledge and skills and an increasing investment in human capital is required. The changing economic landscape of Thailand demands that employees have higher-level knowledge and skills including competencies in the new technologies. They are increasingly expected to be life-long, autonomous and self-regulated learners and to have the ability to adapt readily to changing circumstances. In order to achieve these new human capabilities, aspects of the current education system, in particular the teaching and learning approach and educational management practices commonly used in Thailand, have to change significantly.

The Government has recognised the need for change and this is reflected in the enactment of the National Education Act (Office of the National Education Commission [ONEC], 1999). The intention of the Act is to improve the quality of education and to align it with processes that produce citizens who can contribute to and engage in a market-driven, global economy. The Government recognises that it has to move towards a demand-driven and performance-based incentives scheme for human resource development. Furthermore, it acknowledges the need to change the locus of responsibility for individual professional development from the current system provided by the government to one that is responsive to market needs and generated and provided by individuals themselves. The recent changing requirements of the labour market have seen the emergence of a gap between the knowledge and skills generated by the current Thai education and training systems and the knowledge and skills required to develop and maintain the economy of Thailand at an internationally competitive level.

This report reviews and evaluates school-level, system-level and legislative initiatives in Thailand that have focussed on teaching, learning and teacher training and the professional development of teachers as they relate to these issues.

1.2 Education in Thailand

1.2.1 Overview

Over the last few decades, Thailand has achieved considerable success in providing basic education (Years K-12) to a large percentage of its population. In 1998, 90.7% of primary school-aged children and 72.1% of secondary school-aged children were in schools (ONEC, 1998). This high level of participation has been achieved by providing 45,577 preschools, 33,840 primary, 10,109 lower secondary and 2,563 upper secondary schools. These numbers include both private and public schools (ONEC, 2001). The type of school varies from very remote rural schools that have few teachers, a small student population and limited teaching and learning resources

to very large urban schools of more then 1000 students with many teachers and sophisticated resources.

The Thai Government has not only provided schools but also a large number of teachers. The current teaching manpower comprises of 71,906 pre-school, 254,435 primary, 39,870 lower secondary and 85,569 upper secondary teachers with varying levels qualifications and skills (ONEC, 2001). It is commendable to note that the student-teacher ratio for primary schools is 20.7 and secondary school is 21.6, both of which are below Organization for Economic Cooperation and Development (OECD) and World Education Indicators (WEI) averages (AWEI, 2000).

1.2.2 Administration and Management

The responsibility for educational planning and administration is shared by several central government agencies. The administration of primary, secondary and some post-secondary schools along with teacher training is the responsibility of the Ministry of Education (MOE) while at the higher education level, the Ministry of University Affairs (MUA) is responsible for the administration of tertiary education. For supervisory purposes, the MOE has grouped Thailand's 75 provinces into 12 educational regions. Within the MOE, several departments manage secondary education with the Department of General Education (DGE) being the largest and managing both lower and upper secondary education. The Office of the National Primary Education Commission (ONPEC) manages the primary education sector.

Decentralisation is not new to the Thai education system. Both DGE and ONPEC have established Provincial Directorates (PD) to coordinate school-related activities, preparation of budgetary proposals, general administration, training and supervision, and monitoring and evaluation of school performance. ONPEC is perhaps more advanced in decentralising its management. Their PDs have full authority to manage the primary schools in their geographical areas while the main autonomous responsibility for the PDs of the DGE is to select and hire teachers. Also, throughout Thailand and particularly in Bangkok, there are both primary and secondary schools that are managed by their local municipality such as the Bangkok Metropolitan Administration (BMA).

1.2.3 Teacher Training and Development

To support the rapid expansion of primary and secondary education referred to above, a large numbers of teachers were required. The urgency in meeting this demand for extra teachers seriously compromised quality with the result that there are many teachers in schools who do not have any teacher training at all. For instance, in the secondary schools, many teachers have qualifications ranging from diplomas to Masters degrees in their discipline area but have no teacher training qualifications at all. Those that have had some training have not had any professional development courses since they graduated from their teacher training programs.

Recognising the difficulties experienced by untrained teachers and a need to continuously upgrade teacher competencies while at the same time producing more new teachers, the Government of Thailand established Rajabhats (Teacher Training Colleges). The Rajabhats are managed by the Office of Rajabhat Institutes Council

(ORIC) but are under the responsibility of the MOE. The Rajabhats provide preservice and inservice teacher training and other professional development courses. Currently, there are 36 Rajabhats strategically positioned all over the Kingdom to serve respective communities. The Rajabhats have a strong community orientation and extend their role beyond teacher training to provide educational services to their local areas in research and technical services, technology development and transfer. The Rajabhats offer Bachelor, Associate Degree and Diploma level courses and have recently developed "twilight programs" with universities to offer Master level programs.

Since their inception, the Rajabhats have evolved into comprehensive Colleges of Higher Education, offering programs other than teacher development. With this diversification, resources have been shifted away from the Faculties of Education, which is seriously undermining the quality of teacher development in Thailand. The enthusiasm and pressure to expand and develop new non-teacher development programs in the Rajabhats has led to the neglect of the education programs. Over time, with little in the way of new ideas injected into these programs, they have regressed considerably and consequently are seriously handicapped in developing teachers appropriate for a knowledge-based society. While standards vary significantly from institution to institution, there is a general consensus that there is an urgent need for a major upgrading of Rajabhats generally and in particular the Faculties of Education in the Rajabhats. Staff qualifications are inadequate with only 5% of the staff having Doctoral qualifications and a further 65 % having Masters Degrees. Further, many of these degrees are outdated (Fry, 1999).

To supplement the teacher development work of the Rajabhats, there are also 229 University Faculties of Education that are engaged in teacher development, mainly in educational research and postgraduate training (ONEC, 2001). Many of these Universities have a long history and have served teacher development in the Thailand well. However, with the changing times and the emergence of the knowledge society and a global village, their current narrow focus on only national and local issues has prevented them from accessing international literature and best professional practices.

There are also a number other teacher training activities, particularly inservice training, that are conducted in Thailand. The Institute for the Promotion of the Teaching of Science and Technology (IPST) provides intensive inservice training for science, mathematics and technology teachers at their Institute in Bangkok. They train Master Teachers who then are expected to act as catalysts in local areas to encourage teachers to improve their practices. The MOE also provides some inservice training by allocating budgets to the DGE, ONPEC, and OPEC and using its own staff from the Curriculum and Instruction and Academic Affairs departments of the MOE to conduct most of the training. The separation of the budget for training amongst the three departments often results in duplication and consequent inefficiencies which in turn can hinder quality. There are a few Open Universities who also provide inservice training through distance education. These are mainly formal courses for university credit.

1.3 Key Issues Influencing the Quality of Teaching and Learning

1.3.1 With regard to Administration and Management

Teachers' performance in Thailand is significantly influenced by the administration and management systems. Teachers are required to follow rigid curriculum and are evaluated on aspects that are secondary to good teaching. The system is a very top-down, authoritative model, which fosters distrust and suspicion between the teachers and the management. The school inspectors are out of touch with latest developments in teaching and learning and continue to employ very outdated criteria for evaluating teachers. This type of management model is severely affecting the performance of teachers by adopting a closed system of evaluating and reporting on teacher performance. Such a strict and rigid management model prevents teachers from experimenting with new strategies of teaching and learning and becoming innovative practitioners.

1.3.2 With regard to Teacher Training and Development

Both the Rajabhats and the Faculties of Education are seen as key providers of teacher development needs. However, in recent years because of a lack of cross-institution dialogue and investment in education, those responsible for teacher training and development - Thai educators and their institutions - have not made enough effort to provide the necessary leadership in understanding and implementing educational reform and teacher development. Further, they have not routinely participated in international "learning communities" or been involved in or become familiar with innovative research in teacher development. As a consequence, there has been a rapid widening of the gap between the current knowledge and practices of Thai educators and their institutions on the one hand and the necessary level of knowledge, skills and practices expected of people in an emerging knowledge-based society on the other.

This dissonance is further confounded by the lack of any quality assurance mechanism or teacher licensing for teachers and teacher training and development institutions. An attempt to introduce quality assurance based on performance by Faculties of Education (ONEC, 2002) was not well received. The fear of being exposed as poor quality institutions and the consequent "lose of face" saw many institutions refusing to participate. The indicators used in the Faculty Ranking study would have ranked the quality of programs, physical and human resources and student learning outcomes of Faculties of Education in Thailand.

The continued neglect of teacher training and development in Thailand has seriously affected the teaching and learning processes used in schools and consequently the quality of students learning outcomes. The standard of learning amongst the Thai students has deteriorated significantly causing alarm in the community. For instance the knowledge and skills of both teachers and IT graduates were strongly criticised by Dr Thuwasethakul, Director of The National Electronics and Computer Technology Centre. She attributed the failure of the SchoolNet project to a lack of skills amongst the teachers (Bunnag, 2001b), reinforcing that the teacher training and development programs are in crisis. The need to urgently up-grade teachers was also note by Chulavatnatol (1997) who argues that it is

> quintessential to upgrade teachers and teacher education because the teachers play a key role in education of the youth of Thailand. . . . On the contrary, quality education will be impossible if one simply pours large sums of money or just install more computers or writes new curricula while teachers are underqualified. (p. 40)

He goes on to point out that the decline of quality in Thai teacher development is not new but the search for appropriate solutions has not been very successful. The continuous poor performance of Thai children in many international tests such as the International Science and Mathematics Olympiad (Soydhurum, 2001) is further evidence of the eroding quality in education

In summary, while the physical resources and necessary infrastructure to provide preservice and inservice teacher training in Thailand may be adequate, the quality of teacher training and development is increasingly becoming a concern for the all stakeholders in the country. Despite the Government's efforts such as establishing the IDST and commissioning the World Bank Project on *Secondary Education Quality Improvement Project*, (ORIC, 2001), the quality of teachers and education in general continues to decline. Perhaps the most powerful indictment of the seriousness of declining quality in teacher development and consequently the student learning can be seen in the promulgation of the 1999 Education Act (ONEC, 1999) which makes specific reference to:

- The training and development of teachers, Faculty if Education staff, and other educational personnel (Chapter 7);
- The types of knowledge and skills hat teachers need to develop (Chapter 4);
- The need for decentralised management, both in the MOE and training institutions and organisational units involved in teacher development such as the Teacher Licensing Board and the Office of National Education Standards (ONES) (Chapters 5 and 6).

In the Act, the task of reforming teacher development was visualised as not only multifaceted but also closely integrated. The approach should be one of “unity in policy and diversity in implementation" (ONEC, 1999. p 5). The project reported on here has that multifaceted and integrating focus.

1.4 Structure of the Report

This report reviews and evaluates school-level and system-level initiatives that have been generated by the Education Act (ONEC, 1999). These have focussed on Education Reform through new approaches to teaching, learning and teacher training and professional development. Chapter 2 critically reviews an attempt to introduce new approaches to teaching and learning, its underlying model and assumptions while Chapter 3 reports on a similar critical review of current and proposed plans for teacher development. Chapters 4 and 5 extend the examination of teacher development by exploring the link between the provision of teacher development required to implement the new approaches to teaching (Chapter 4) and to prepare teachers and administrators (Chapter 5). Chapter 6 critically reviews the current and proposed incentive systems while Chapter 7 does the same for the assessment and monitoring proposals. Finally, Chapter 8 identifies the issues that need to be resolved in order to implement sustainable teacher development.

CHAPTER 2 EDUCATION REFORM THROUGH NEW APPROACHES TO LEARNING

This chapter focuses on Education Reform through the implementation of new approaches to teaching and learning. It reviews a pilot project that attempted to do that and critically evaluates not only the model used in the project but also the central role that student-centred learning has in the model. Throughout each section, recommendations for further action are made but the final section synthesises these into a series of key issues associated with implementing the Education Reform through new approaches to teaching and learning..

2.1 Review of the Pilot Project on New Approaches to Learning

The Education Act (ONEC, 1999) recognised a need for Thai schools to develop new types of knowledge beyond the technical knowledge that is currently emphasised. It also recognised that this would require new approaches to learning such as student-centred learning. With this in view, ONEC commissioned a national pilot study to introduce the new learning approach (ADB TA 3585-THA) (Piya-Ajariya, 2001). The pilot project used an ambitious pioneering initiative of a school-based whole-school immersion approach to training. This decentralised bottom-up model contrasted strongly with the existing traditional authoritative top-down college-based staff development system of inservice training. The project involved 253 schools, 10,094 teachers, 224,471 students and 44 Research and Development (R&D) teams with a time line of approximately 9 months. The complex approach adopted in the project hoped to make the learning experience authentic and empower the learners (master teachers, school administrators and students) to take a more active leadership role in implementing the reforms envisaged in the Education Act.

The teachers, administrators and R&D team all learnt as they worked in the project and despite the very limited training in underlying principles of the student-centred approach, of action research for professional development and of decentralised management and monitoring systems, the project achieved reasonable outcomes:

- It successfully developed an awareness of the current Education Reform initiatives amongst all stakeholders;
- Teachers were enthusiastic to experiment with new teaching and learning tasks;
- School administrators became aware of their new role to support and facilitate teachers in their endeavours;
- The parents were excited that they were involved in their children's learning;
- The R&D teams recognised the need to change their roles and be more closely involved with schools;
- It generated considerable public debate and an awareness of the urgent need for education reform, new teaching and learning methods and new management approaches (Bunnag, 2001a; Lim, 2002).

Given the long history of a teacher-centred approach and a centralised management and monitoring system in Thailand, it was prudent that the project leaders chose to implement the new concepts gradually. Thus, participants were introduced to just two concepts:

(a) a single strategy from the repertoire of student-centred learning strategies, namely project-based learning, and
(b) the Plan, Develop Check and Act (PDCA) model of action research. This was to be used by the school-based management and R&D teams as a mentoring strategy.

Unfortunately, these two concepts were introduced in the traditional way in a very simplistic manner through highly prescribed procedures that did not allow much latitude for teachers to be discretional. Teachers were, as they had in the past, simply following a new set of procedures. This should be viewed as perhaps a necessary and appropriate first step in a developmental process that will eventually lead to more autonomous teacher behaviour. This ongoing process must be supported to gradually progress to more complex concepts and procedures that will lead to fully professional competencies. In its current form, it is very limiting for the students, school administrators and particularly for the professional development of teachers.

The above observation is not a criticism of the project. Rather it illustrates the scope of work that is yet to be accomplished and the need to move forward in small steps, being cognizant of the influence of history. It is absolutely essential that the teachers are given more comprehensive training in the theoretical, philosophical and practical aspects of the new teaching and learning methods including student-centred learning (see Appendix 1). If not, in the long-term, the work of this project will be counter-productive as it will still emphasise memorisation with teachers blindly carrying out a specific set of new procedures without question. Teachers need to become truly professional practitioners who have the capacity to identify the most appropriate strategy and design learning experiences for specific learning situations, students and content. Consequently, they should be assisted and encouraged to expand their skills and their understanding of different types of knowledge and the underlying philosophies of the new approaches to teaching and learning.

Similarly, the PDCA method, while very well implemented has unintentionally been perceived as an absolute, an end in itself, by many teachers and administrators. This is partly because of a lack of understanding of the purpose of the four stages and particularly the lack of recognition of the importance of the feedback loop in teacher professional development. The role of reflection in the process of action research was not discussed sufficiently to illustrate its crucial role. The school administrators did not fully appreciate that their role is no longer about controlling teachers but is about facilitating innovation and best practices. Such an appreciation requires a significant shift in the power relationships between school administrators and the teachers and the educational belief systems of both groups.

The efforts of the participants involved in the pilot project must be applauded for taking on such a huge challenge as attempting to change the teacher-centred approach to learning, one which is steeped in history and tradition. They have made a start but an enormous amount of further work is still required to equip teachers with the knowledge and competencies to be discretional about their practices and to become professionals. For instance, while the pilot project introduced the project-based learning approach from the student-centred model, the conceptual and wholistic nature of the strategy was not explained. Thus the teachers, focussing on the traditional technical outcomes of learning, were unable to recognise the scope of what the children learnt by being involved in the project activities. They failed to recognise

for example that children learnt tolerance when working in groups, communicating skills when working with others, and a sense of mutual respect for the ideas and suggestions of others when working in teams. Children make inferences between and deductions about different concepts as part of the information gathering, analysis and synthesis. They make judgements about such things as what is appropriate reading, which people should be interviewed, all of which require complex reasoning. Group work assists children to generate better understandings by accommodating the ideas of others to make their personal meaning richer. Other strategies such as debates, brainstorming, excursions, independent work, emphasis on explanation and reasoning were not discussed or demonstrated much in the project. Similarly, for the school administrators the shift from controlling and inspecting teachers to empowering and supporting is not fully appreciated. This is understandable as many of the school principals are products of a system steeped in the traditional approach and it will take time for them to shift and become fully competent in and comfortable with the new practices.

A key assumption underpinning this type of bottom-up immersion approach is that there is sufficient knowledge and skills within the groups locally, to stimulate and guide the development of new innovative practices. This may not be totally true in the case of Thailand, particularly rural Thailand. The language barrier has prevented Thai educators from accessing the latest international literature in learning and teaching. Due to this limitation, there are very few Thai educators who are competent in dealing with the new concepts introduced in the pilot project. Knowing how to follow a series of procedures does not necessarily mean understanding the purpose behind the actions. The process and concepts introduced in the project are very useful but care must be taken not to duplicate the very problem that the Education Reform intends to overcome. That is the problem of having teachers and school administrators as technicians (following procedures) and not professionals where they understand both the theoretical (principles, assumptions and facts) as well as the practical (procedural and actions) nature of the new model. To fully appreciate the assumptions of student-centred learning such as the capacity to engage in productive inquiry and the capacity for individuals to self regulate their own learning requires some theoretical understanding of the concepts. The inability of Thai educators to simplify learning theories and demonstrate practical applications is a major concern. Teacher educators often make theories too abstract, limiting their usefulness. Similarly, school administrators need further detailed and extended training in the underlying assumptions of decentralised management and school-based management such as changed roles and functions if they are to fully appreciate and adopt the new practices.

During the wrap-up workshops at Khon Kean and Chiang Mai, seminars were presented to participants from the pilot project to challenge their understanding of the new learning approaches. They were introduced to a framework of knowledge types (see Appendix 1) as a means of elaborating Section 23, Chapter 4 of the Education Act which discusses the need to teach new types of knowledge. The participants were also introduced to why and how the teaching and learning approaches and strategies need to change in order to facilitate the acquisition of the new types of knowledge. The intensive discussions and the responses from the participants at these workshops confirmed the need for a more in-depth understanding of the new concepts and processes, supported by extended practice. Furthermore, the participants acknowledged their limited expertise and requested more extensive training and

mentoring by local experts. This concurs with the recommendations contained in the project's final report (Piya-Ajariya, 2001; also see Appendix 2). The need to develop a deeper understanding of the concepts and procedures through international and local collaboration is highly critical to the success of the Education Reform through implementing the new approaches to teaching and learning.

2.2 General Observations about the Model used in the Pilot Project

What follows are a series of comments related to the model used in the pilot project. They are particularly relevant to a more widespread implementation of the model.

- Conceptually the model is sound but considering the background of the stakeholders and the context, it is extremely ambitious to introduce so many new processes simultaneously. The multidimensional approach probably added complexity to the already complex and new concepts that were being introduced. For instance, adopting a school-based management (SBM) model can be a challenge in itself for principals, parents and teachers. However, when the SBM is introduced conjointly with other aspects such as the new learning approach, school-based training of teachers and the introduction of information and communication technologies (ICT), it all can be very daunting and its complexity self-defeating. To ensure the sustainability of such a complex model, it is absolutely essential to provide long-term support and continuous training and to consider a phased introduction of the various elements.

- Most models have certain assumptions that need to be put in place first before the model can work. In a bottom-up immersion approach, it is assumed that there is sufficient knowledge of recent innovations in learning within the group to generate new knowledge and the associated innovative practices. This may not be true in the case of Thailand and in particular the rural areas. There is an urgent need to inject new ideas/concepts to help teachers and administrators to change their practices. There is need for more workshops to introduce key principles of the new practices and to assist teachers and administrators to develop processes that will enhance the knowledge and skills of their colleagues and in turn their students.

- The R&D teams are expected to provide support and nurture teachers and school administrators while many members of the teams themselves do not have sufficient knowledge of and expertise in the new practices. Again there is a need to conduct workshops for the R & D teams. Given the wide distribution of Rajabhats, it may be wise to invite them to adopt some of the R&D mentoring role for their respective regions as their core business.

- Participation in the pilot project was to a large extent based on good will of the teachers and school administrators. This may work for a pilot project, which has a short timeline but for a more sustained and long-term participation, some form of incentives such as workload compensation, new equipment and/or monetary support needs to be considered.

- Ideas emerging from the pilot project may not fit easily with the everyday functioning of the MOE and could well be lost. There is a need to involve the

MOE as a partner in any model for ongoing projects with a mandate that the lessons learnt from them or the pilot project should be integrated into the work of the MOE. It is important that aspects of the model have the flexibility to be assimilated within the daily operations of the MOE. For instance, the school-based mentoring by the R&D team was very useful but it may be seen as duplicating and/or conflicting with the role of the MOE school inspectors. Perhaps the school inspectors could be trained and deployed at regional offices to carry out the mentoring and report via the new decentralised system.

- Considering the large number of inservice teachers that require training, alternative methods of delivering information and supporting the ongoing professional development of teachers should be considered. The pilot model incorporated face-to-face workshops where teachers were presented with new concepts and shown new methods but for national implementation in an expanded model, there will a need for significantly more such workshops or their equivalent. Given the magnitude of the problem, it may be necessary to explore other delivery methods to provide continuous and developmental support to the teachers. Some possible approaches are:
    - Delivering information about the new concepts and practices via ICTs;
    - Facilitating the development of professional networks to provide self-help in the support of continuous learning and the professional development of teachers and school management.

2.3 Educational Reform and Student-Centred Learning

Although the Education Act (1999) does not specifically mention student-centred learning as the only "new" approach to teaching and learning, recent literature related to reforming education has identified it as a key concept. Student-centred learning evolved out of the constructivist paradigm of learning. It is a philosophical approach to understanding human learning and was developed by a group of Russian educators (e.g. Luria & Yudovich, 1971; Vygotsky, 1962). Its underlying assumptions are that knowledge is

- *Actively constructed* by and not given to the learner. Active learning requires learners to engage in the learning process by directing their attention to the learning activities and actually doing things to discover the associations between concepts, issues etc. Learners are encouraged to actively participate cognitively and physically in the classroom;
- is best constructed through *authentic learning*. In other words, it is learnt in its real context or the context in which it was first generated. It is about linking school learning experiences to real world situations;
- is best constructed when the tasks are within the *"zone of proximal development"* (Vygotsky, 1962). Learners have to be ready and prepared for the learning experiences. Put another way, learner readiness is a key concept;
- is best constructed when a new concept is linked to a number of different concepts using an *integrated approach*. All knowledge is interrelated and the more connections that can be made between different elements within a concept and between concepts, the deeper and richer our understanding. It is important that teachers explicitly provide the connections or let children explore the connections.

Adopting student-centred learning as a singularly-focused or only approach for the Education Reform in Thailand as the pilot project did, may not necessarily produce those human capabilities that are most valued for a knowledge-and information-based society (Pillay & Elliott, 2002). The trend in education reform around the world is to provide choices and alternative approaches to learning where teachers as professionals have the knowledge and skills to decide which approach to adopt when and for what reasons. Delors (1996) also noted the need for a range of alternative approaches. He argues that education is about preparing people to live in a world of dilemmas where they would need more that one approach to survive and function effectively.

It is understandable why the reform leaders in Thailand adopted student-centred learning as the main focus of change in the teaching and learning approach: simply to move away from the highly teacher-centred or didactic approach that has existed for a long time in Thailand. However, it must be cautioned that student-centred learning is just one of the many approaches available. This issue is explored in more detail in Chapter 4 (Section 4.2).

2.4 Key Issues in Implementing Education Reform through New Approaches to Teaching and Learning

Reviewing the participants' understandings of the new approaches to teaching and learning in the pilot project indicated that there were many misconceptions and/or a lack of understanding of the underlying principles of these new teaching and learning approaches. Listed below are some of the key issues that the participants had difficulties with. These would need to be addressed in whatever procedures were to be used for professional development, whether they be face-to-face workshops, ICT-based training, professional networks and/or mentoring.

- The new teaching learning methods require a change to the fundamental philosophy and beliefs about the nature of knowledge and how children learn. The extensive history of a very localised and nationally-focussed education system has hindered opportunities for Thai educators to get access to pedagogic innovations and research from outside the country. Such limitation has created a large gap between the knowledge and skills of innovative teaching and learning practices adopted elsewhere and those that are practiced in Thailand. As opposed to simply transmitting knowledge, teachers need to conceptualise knowledge as a personally constructed entity of the learner and to understand that their role is to facilitate this construction process. They need to appreciate the complex multidimensional nature of knowledge and know how to break down the subject content and process to make it simple and enjoyable for children to learn.

- Teaching should be about providing an environment that is most conducive to learning. Children should be encouraged to experiment, discover and take risks. The student-teacher relationship should change from a hierarchical power one to one of partners in learning. Currently for example, Thailand teachers fear that children may damage equipment or may come up with ideas that they may not be able to explain. As a result children are discouraged to experiment or ask awkward questions.

- Teachers are not the only source of knowledge. Learning does not have to be confined within the walls of a classroom. Village elders, parents, museums, historical sites and the Internet are examples of other sources of knowledge. It must be cautioned however that when using local knowledge, teachers need to expand and elaborate on it to illustrate the evolution of practices and situations evidenced today. Further, teachers need to introduce new ideas from national and international contexts to analyse local stories and events. Of central importance here though is the notion that the teachers' role has to change from the presumed expert who is the fountain of all knowledge ("The Sage on the Stage") to one who stimulates and challenges learners ("The Guide on the Side").

- Children learn better as a community of learners. Hence group work and project teams should be used to systematically analyse classroom transactions and examine experiences and values. Teachers seem to be unsure of how to plan for such work. Often children are left on their own with some very general instructions. Designing lessons that involve a "community of learners" often goes beyond the classroom time thus requiring considerable skills which many teachers did not seem to appreciate.

- Teachers need to draw from different discipline areas to integrate learning experiences and use team teaching to achieve integrated learning outcomes. Teachers in a team can bring their different expertise to bear on a topic, which can make the learning experience for students very rewarding. Alternatively, teachers could develop specialisation in more then one subject such as biology and geography. Having two teaching subjects would allow them to interchange biological and geographical concepts in the different subjects and to teach generally about the environment. This dual specialisation will be particularly useful at the secondary levels of schooling.

- Learning experiences that relate to students' personal everyday experiences are most easily learnt and often the most difficult to forget. Thus, recognition of children's prior knowledge and explicitly integrating new learning with old must be emphasised. Personal meaning is also enhanced when learning activities and concepts articulate with real life applications to make learning an authentic experience. Teachers need training in using lesson plan matrices to plan for authentic, integrated and active learning.

- Students should be actively involved in learning, both cognitively and physically. This warrants new ways of developing and delivering lessons, using activity-based teaching and learning where the design and selection of learning activities need special consideration. Teachers need assistance in developing matrices that deconstruct topics and identify appropriate strategies and assessment tools.

- Teachers should encourage the thinking skills of learners such as reasoning, decision making, reflecting, making inferences and problem solving. These types of activities encourage students to engage cognitively and emotionally with the learning tasks. This is a significant departure from recall and reproduction type of learning which is most associated with the teacher-centred didactic approach.

CHAPTER 3 EDUCATION REFORM THROUGH TEACHER DEVELOPMENT

This chapter focuses on Education Reform through teacher development. It reviews the implementation of the current plan and proposed programs related to teacher development.

3.1 Introduction

There is general consensus amongst educators, parents and students that the quality of teachers has regressed considerably in recent years (Sinlarat, 1999). Initially the Government took action by establishing the Institute for the Promotion of the Teaching of Science and Technology (IPST) with the brief to develop quality teachers for mathematics and science (Soydhurum, 2001) and commissioning projects such as the King's project to provide quality education to rural area. Despite such interventions, there was little evidence of any major improvement in the quality of teachers. To avoid further regression in the quality of teachers and recognising the seriousness of the consequences, the Government in the National Education Act (ONEC, 1999) recognised that investment in teacher development can provide a high return as it has the capacity to have a multiplying effect. The whole of Chapter 7 (sections 52-57) of the Act outlines the issues related to the professional development of teachers, Faculty of Education staff and other educational personnel. The reforms suggested were:

- To develop new structural and functional requirements for organisational units concerned with improving teacher development;
- To provide guidelines for new teacher training programs, both inservice and preservice; and
- To establish quality assurance mechanisms for teachers including a licensing system for all teacher and teacher education institutions.

These suggestions formed the basis of the current plan for Education Reform through teacher development. That plan is reviewed below.

3.2 Review of the Current Plan

Under the current reform initiatives, it is proposed that the MOE be restructured to streamline its operations. The proposed restructure is summarised in Appendix 3 and proposes that all teacher training institutions be under the Commission of Higher Education, providing a common framework from which teacher development reform may be implemented. This proposal would allow all teacher development activities to be evaluated using common criteria, would reduce overhead costs and provide the possibility for a more consolidated and efficient system. As part of the restructuring, the previous two-tier system that differentiated between Faculties of Education within Universities and in Rajabhats would be removed.

The restructure proposes that a new Independent Public Organisation (IPO) be established which would report to MOE. This IPO would have seven separate departments:

- Council for Teachers and Education Personnel;
- Office of Education Standards and Evaluation;
- Teacher Development Institutes;
- Institute for the Promotion of the Teaching of Science and Technology;
- Technology for Education Promotion Office;
- National Test Bureau; and
- Teacher Council/Association.

The current thinking suggests that all these departments be located at a central office in Bangkok. However, the Education Act recommends decentralising a significant part of the administrative and management function of the MOE. The hiring of teachers and the monitoring their performance is decentralised to a certain extent in the current system, but varies considerably for example from the primary to the secondary levels. This decentralisation process needs to be expanded and made consistent across the whole system. Thus far, there has not been much progress in decentralising the role of the MOE with regards to teacher development.

To assist with the conceptualisation and implementation of the reform initiatives, a number of task forces have been established to prepare documentation. These task forces include the Office of Education Reform (OER), the Teaching Profession Reform Office (TPRO), the Teacher Development Task Force (TDTF), the Office of Educational Standard and Evaluation (ONES) and the Teacher Training Task Force (TTTF). Many have undertaken a considerable amount of work but it is often not clear to whom these task forces report. It appears that these task forces are operating independently and thus lack coherence. The documents that were reviewed use different names to identify each of the departments and the new concepts making it difficult for all stakeholders to fully appreciate the reform initiatives. There is an urgent need to develop a common language so that all working groups have a common understanding. A common language is important to develop a critical mass of reformists who have a common understanding and thus can drive the reform in the same direction. At the moment, the various researches conducted and reports developed under the Reform are reported individually or collated as anthologies and many use different words and acronyms to describe similar processes and concepts. It will greatly benefit the reform if the outcomes were synthesised to extrapolate principles that underpin each innovation in order to achieve the aim of the Act which recommends “unity in policy and diversity in implementation" (ONEC, 1999, p. 5). Focussing on diversity in implementation without any synthesis can lead to misunderstandings and duplication. New practices are useful and powerful only if others can appreciate and share the value and compare them with their own practices. Such a synthesis would provide the opportunity for a comparative analysis of the various innovations and with other similar national and international initiatives. Recognising that the efforts and processes adopted in the Thailand Education Reform concurs with other international projects would give the reform leaders some urgently needed reassurance.

By way of a specific example, the ONEC (2000) monograph on Learning Reform provides a useful overview of the understandings of various stakeholders (ONEC, ONPEC, DGE, DVE, BMA, LEA and non-government organisations) (pp. 38-74). The inputs made by the stakeholders are very informative and well supported by research literature. What is required with regard to this report is perhaps a matrix that

uses common terms. Once this is developed, it could be used to facilitate the synthesis of the different contributions and facilitate the extraction of general principles underlying their practices. This in turn would allow greater transferability of those practices and facilitate a broader understanding.

While a lot of energy has been expanded in conceptualising teacher development within the Education Reform, there is still need for greater clarity, more details of operational matters, and increased articulation between the various task forces and the proposed organisational units. Most of the work done thus far has concentrated on formulating policies at a macro-level but its implementation at the more micro-level is yet to occur. Following are some specific examples of unresolved operational issues:

- Some of the MOE policy material will presumably require ratification by other government departments such as the MOF and CSC. It is not clear if this ratification with other department had been undertaken yet. For example the proposed teacher classification needs to be discussed with MOF as it has financial implications.

- The relationship between the ONES and the Teacher Professional Council is not clear.

- With regard to the licensing of teachers and teacher training institutions, the roles of the Commission of Higher Education and the ONES are not clearly defined and articulated. These organisational units need to work together but this is not possible as details of roles, responsibilities and reporting obligations are not yet developed. The teacher competencies or the institutional requirements for licensing need more micro-level thinking and clearer articulation. Operational issues such as appeals mechanism against decision made by the Teacher Professional Council has not yet been considered. Also will the Committee for Teacher Profession Standards and the Committee for Standards of Administrators be entirely separate entities or will they have some overlap? The similarity of knowledge and expertise required by both committees and the natural progression from teachers to school administrators presumably means that the units will have a certain degree of overlap. Alternatively, the two committees for standards may be seen as hierarchical with administrators and teachers who move to leadership roles having to meet both the teaching standard at a high level and then be judged against the administration competencies. There is need for more clear, careful, detailed thinking and planning to operationalise many of the proposed organisational units.

- There are some institutions such as the IPST and the proposed Technology for Education Promotion Office whose role and place within the new structure is not clear. Currently, IPST overlaps with the Curriculum and Instruction Department within the MOE on school curriculum innovation and with the Rajabhats and Faculties of Education in teacher training activities. It is possible a similar situation may occur with the Technology for Education Promotion Office? It may be worthwhile to expanding the role of IPST to include the promotion of technology education especially when IPST is currently doing some of that work.

- Consideration should be given to ways of disseminating and sharing of information across the various departments. Currently there is very little cross-departmental interaction and sharing which has led to several duplications of activities. For instance the work done by IPST is not known to the Rajabhats and vice à versa.

As is apparent from the above examples, there is need for further dialogue between the parties to consolidate proposed organisational units and develop clear and precise operational policies and procedures. So far very little if any operational issues such as, roles, functions, reporting and monitoring responsibilities of the new organisation units have been developed. Perhaps a Manual of Policies and Procedures (MOPP) may have to be developed to ensure the various new organisational units have a clear and accurate understanding of their roles. Such a manual will assist in avoiding overlap, duplications and conflicts and also ensure efficient operation of the different organisational units.

Note that while the proposed structure outlined in Appendix 3 was current at the time of this mission, further changes were being discussed which may change the reform initiatives discussed in this report. These constantly shifting policies tend to stall the progress at the operational/implementation levels.

What follows is a further discussion of some of the important proposals associated with Education Reform through teacher development.

3.3 Review of Some of the Key Proposals for Teacher Development

3.3.1 A National Framework for Teacher Development

One way to ensure unity in conceptualisation and diversity in implementation is through the establishment of a national framework for teacher development. The present approach to teacher development in Thailand is very fragmented causing a lot of confusion and duplication. Adopting a national framework is an approach consistent with practices adopted by many other countries engaged in education reform. A national framework will provide a basis for all institutions, organisational units and programs dealing with teacher development to map their activities and account for what and how they are initiating new developments or adding value to the work of the Education Reform. There is a need for a blueprint of how the various departments charged with the responsibility for teacher development can divide the roles and still add value to developing quality teachers for Thailand.

It is important that any such framework should be linked to the competencies and qualifications necessary for teaching at various levels of schooling and for different subjects. It should also consider articulation of the teacher development curricula for both preservice and inservice training with teacher licensing and teacher incentives. While the involvement of all stakeholders is necessary to foster ownership of new practices, it is equally important that innovative practices developed by individuals or groups support and are consistent with the national framework which in turn supports the national economic and social plans of Thailand.

A national framework is not to be seen as a centralised system rather a *framework* to ensure accountability, quality and equity within a decentralised management model. Providing coherence through a national framework for teacher development will overcome some major obstacle for the current reform initiative. Consequently, there is an urgent need to consider the implementation of a national framework within the current Education Reform to ensure meaningful progress of that reform.

3.3.2 Preservice Teacher Training

With regards to preservice teacher training, the major work so far has concentrated on the development of two models to replace the current four year BEd program:

(a) a 4+2-year program (BSc [for example] + BEd) (Pitiyanuwat, 2001); and
(b) a five year BEd (proposed by the Rajabhats).

With regard to model (a), students will study for a basic degree such as a BSc and follow that by a 2-yr Grad Dip, BEd or MEd program. This two year program is made up of one year of teacher training and a year of professional classroom practice. At the moment it is not clear whether only one or all three of the above options will be used and how the three post-graduate programs articulate with each other and the associated new salary structure.

Model (b), developed by the Rajabhats, proposes a five year BEd. Whilst significant work has been done in the design of the new program, it may not deliver the outcome the Education Reform is expecting and that is teachers who are capable of implementing the new approaches to teaching and learning. There is concern amongst some senior representatives of the MOE and ONEC that the proposed Rajabhat program is the same as the current four year program except that it has 23 weeks of teaching practice rather than 12 weeks. A review of the current and the proposed curricula indicated in both a lack of focus on the new teaching and learning issues such as a comprehensive understanding of knowledge for the information age, attributes of a knowledge worker, new learning models and technology-based learning. There is little or no focus on developing the teachers' abilities to selectively use strategies to maximise student learning outcomes.

There is an urgent need to completely reconceptualize the preservice teacher education curriculum and for serious dialogue to justify the rationale for both models (a) and (b). Issues of concern are:

- Is there a direct relationship between increasing the preservice training time to five or six years and improving quality? There seems to be an assumption that the length of teacher training program is directly proportional to the quality of teachers produced. There is no research evidence to support this and it is a significant deviation from international best practice which suggest that the most significant factors that affect the quality of teachers produced are the content of and the processes used in the programs. Many countries that produce very good teachers use a four year program with teaching practice embedded in the four years. Perhaps a comparison with such international best practice in teacher education curriculum development may be useful in reconceptualizing the new curriculum and emphasising new approaches to teaching and learning. Discussion

with senior representative of ONPEC indicated that they preferred a four-year program but with revised teaching and learning content and processes.

- There seems to be confusion as to whether primary and secondary teachers both will have a similar length of program. If the primary teachers adopt a four year program and the secondary a six year what does this mean to the salary structure for teachers? Further discussion and investigation is needed to ascertain the knowledge and skills expected of teachers to adopt a student-centred learning approach for primary education.
- Given that it is difficult to attract good quality students to teaching profession, will prospective students be further discouraged by such a long preservice training time?
- Why should a teacher training degree be longer then a degree in Accounting or IT? Does it mean that other professional groups can also increase the initial training period and ask for higher salary? There is need for a detailed study of the wider implications of and planning for the sustainability of these recommendations.
- New models such as the performance-based model of quality improvement need to be considered for both teacher-training programs and for institutions involved in teacher training.

3.3.3 Inservice Teacher Training

Considering the large number of teachers currently in the service whose expertise in new teaching and learning approaches will be critical in implementing the Education Reform, it is surprising that very little work has been done in planning, developing and delivering inservice training in new teaching and learning methods. The intake of new teachers in Thailand is very small and it is mainly at the primary level. The over supply of teachers at the primary level has promoted a recent proposal by the MOE to redeploy some of the primary teachers to the lower secondary sector. In secondary schools, there is a shortage of science and mathematics teachers. The biggest impact of the teaching and learning reform rests with the teachers currently in classrooms and yet little attention has been given to

(a) developing an inservice training program to help these teachers to adopt student-centred learning and other new practices; and
(b) considering innovative approaches to delivering that program.

These perhaps are the biggest challenges to Thai teacher development as it relates to Education Reform.

The only major inservice training in new teaching and learning approaches for classroom teachers was through the workshops in the pilot project (ADB TA No.3585-THA) (Piya-Ajariya, 2001). A few other workshops have been conducted by the IPST and by the MOE but details of the content of those training is not known. This is of serious concern, as many of these teachers have not had any training since they graduated some 20 or more years ago and certainly no training in new teaching and learning methods. Sukhothai Tamasharat Open University (STOU) has been asked by OER to develop some distance teaching material but this is more of an awareness type of program rather than the content and processes associated with new teaching and learning approaches and strategies. Considering that inservice teachers cannot be taken away from classrooms, there is an urgent need to direct resources to developing and planning the delivery of inservice training. Whilst some understanding

of distance learning is available in Thailand, integrating the new delivery technologies and the new course content and design will require assistance from international experts.

3.4 Key Issues Related to Supporting Teacher Development

This chapter has reviewed those aspects of the Education Reform that relate to teacher development. Below is a synthesis of the major issues associated with that.

To improve the probability of success with the Education Reform, it is important that those responsible for the reform in Thailand:

- Develop a national framework for teacher development with clear guidelines for structural and functional responsibilities.

- Review current policies to ensure they cover all necessary aspect of proposed new organisational units with a clear articulation between the different units. In particular, policies for decentralising teacher development should be carefully developed with the responsibilities shared among the Rajabhats, the FOEs, provincial MOE and schools.

- Develop mechanisms to operationalise the policies including staff development for the respective organisational units. Those new organisation units that have been set up to support teacher development may well require new knowledge and skills and it is absolutely essential that the staff working in the new units be trained well.

- Upgrade the knowledge and skills of all teacher educators. All teacher education institutes should develop a staff development model to ensure an increase in the number of staff with PhDs, increased international quality research and publications etc. A core group of staff with a deep understanding of the new concepts and principles is needed to provide mentoring and continued support.

- Develop more comprehensive incentive schemes that are institutionalised rather than attached to special projects. Currently, when the project finishes its unclear as what happens to the incentives.

- Consider the monitoring all preservice and inservice teacher training programs by the unit responsible for Teacher Licensing to ensure that quality is maintained and has comparability with international programs. This is not sufficiently covered in the policy and guidelines for teacher licensing.

- Ensure that there is a balance among the local, national and international content in all school curricula and that the multidimensional nature of knowledge as summarised in Appendix 1 is also addressed. It would help if some international literature and teaching resources could be translated and distributed to teacher training institutions and teachers.

- Assist in developing new preservice and inservice curricula to suit the changing roles of teachers and expectations of society.

- Develop plans to provide long-term support to teacher and other staff involved in the Education Reform. A useful starting point would be to maximise existing distance learning facilities and teacher professional development networks. Given that one of the most serious issues is the inservice training of teachers, an investigation of alternative models of delivering the training should be an urgent priority.

- Consider the operational issues necessary to encourage the empowerment of individuals and institutions to be innovative in order to meet the challenges of the Education Reform. While the Education Act suggests that the MOE should adopt a more supervisory and coordinating role, there is still a mindset of control amongst many of the staff of the MOE. The new organisational units still place emphasis on the inspection of teachers' work or of an institutions' capacity rather than setting detailed and transparent guidelines, which the teachers and institutions may use as a basis for reporting their individual annual performance. With the latter approach, the onus for complying with the requirement lies with the individuals and the institutions. Such an approach shifts the responsibility for ensuring the basic quality requirements are met away from the MOE and empowers individuals and institutions to be innovative in meeting the agreed guidelines. As a consequence, the MOE staff will also be freed to engage in activities that will support the teachers and schools. However, the MOE staff themselves will need training about this new mind set of supporting rather than inspecting teachers.

CHAPTER 4 TEACHER COMPETENCIES NECESSARY TO IMPLEMENT EDUCATION REFORM

Chapters 2 and 3 reviewed both the role of new approaches to teaching and learning, particularly student-centred learning, and the role of teacher development in the implementation of Education Reform in Thailand. This chapter integrates these two aspects by identifying the competencies needed to implement student-centred learning and assessing the scope of the further teacher development that will be required in order to develop those competencies.

4.1 Teacher Competencies Needed to Implement New Approaches to Teaching and Learning

4.1.1 The Necessary Competencies for Teachers

As indicated in Chapter 2, in the Education Reform process in Thailand, the current "new approach to teaching and learning" being utilised is the student-centred approach, specifically project- and group-based activities. This was selected because it provided a significant shift away from the traditional teacher-centred approach (ONEC, 2000, p. 39). It was suggested in Chapter 2 (Section 2.3) that, although this was a good place to start and the decision was understandable, in the long-term, other approaches would need to be explored. That notion is explored here in a little more detail.

International research on learning theories has moved beyond relying solely on the student-centred approach to a *distributed learning* model, which argues the need for a repertoire of approaches and strategies. Just as there is no single solution to all problems, one teaching approach will not facilitate the development of all knowledge types. Nevertheless, any of the teaching and learning processes that are used should concentrate on encouraging learners to construct personal knowledge and meanings and at the same time integrate the new knowledge to socially accepted values and behaviours. There is a need to expand student-centred learning to include other approaches to learning because different students learn through different approaches.

Teachers need competencies that stretch from student- to teacher-centred, from individual to group learning, from collaborative to competitive approaches. These are on a continuum and teachers and students need to be able to move back and forth within the continuum to achieve the maximum learning outcomes, dependant on the content, the learning context and the students.

A typical set of continua that represents the distributed learning model is:

Collaborative----------Competitive
International----------National
National ----------Local
Individual----------Teamwork
Discovery----------Instructive

Different positions on each continuum will facilitate the construction of different types of knowledge. Sometimes learners may need to explore and discover meaning for themselves while at other times, they may need to listen to teachers and reflect on the message to develop their understanding. Learners need to develop the ability to work as individuals and in teams, to learn by themselves, with others, and from others, to learn with technology and from technology. Individuals may be expected to think local and global knowledge simultaneously. Such diverse abilities will allow learners to become critical consumers of information and knowledge.

Thai teachers need to have the capacity to use their professional discretion as to when to apply what approach. To provide the range of learning environments to suit the needs of the learners above for example, there are times when they will need to use a teacher-centred learning approach and the teacher may be the only source of knowledge. At other times, the source of best knowledge may reside in local experts and children can discuss issues with them or listen to their experiences and stories. It is important to realise that student-centred learning does not necessarily mean all learning has to be based around *physical* activities that students engage with. Human cognition literature notes that *mental activity* may be encouraged by an overt physical activity or through mental reflection. Hence sitting and listening can be a very active learning experience. Thus teachers need competencies in using a range of strategies to effectively stimulate, challenge and assist each child, including but not exclusively using student-centred learning.

Thus the various stakeholders in the Education Reform movement need to continuously expand their abilities to work with as many approaches as are necessary to facilitate the construction of students' personal understanding of the various types of knowledge noted in the Education Act (ONEC, 1999) and elaborated in Appendix 1. However, as a starting point, teachers will need to develop competencies in the student-centred approach to learning. They will then be in a better position to begin to decide on moving on to the other continua identified above. Subsequent discussion focuses on the student-centred learning approach.

4.1.2 The Current Competencies of Teachers

Given the long history of using a very rigid and highly monitored teacher-centred learning, the most significant aspect that needs to change is the teacher's disposition or educational belief system. Many teachers in Thailand still do not appreciate the need for change or what is new in the student-centred learning approaches to teaching. It will require considerable input to change their fundamental beliefs and to encourage them to engage in the Education Reform-initiated activities. This has been further confounded by fragmented information provided to teachers, which is often not accurate or clearly explained. It would be prudent to invest some time in educating teachers about why they need to change and about the new ways of conceptualising what knowledge they need in classrooms. Such workshops along with television programs and panel discussions, can influence their beliefs about their old practices. The knowledge and skills about new teaching learning strategies will only be effective if the teachers have the conviction and belief that it will enhance student learning.

Interviews with teachers, educators and school visits revealed that there was evidence of the recognition for a need to reconceptualize the types of knowledge and skills

necessary for the 21st century and then to develop appropriate strategies such as student-centred learning. However, the majority of the education stakeholders are not familiar with the emerging knowledge and skills necessary for a knowledge society nor do they have a deep understanding of these knowledge and skills. The findings of the pilot project detailed in Chapter 2 also recognised this gap and made recommendations to engage in a thorough reconceptualizing activity (see Piya-Ajariya, 2001 and Appendix 3).

There is also a lack of understanding of recent learning theories and associated strategies that foster the acquisition of the new types of knowledge and skills. This deficiency was also noted in the UNESCO-PROAP (1999) report which argued that one of the main problems facing teachers in both the primary and secondary sectors is a lack of the necessary new knowledge, skills and dispositions and methods of acquiring them. Further recognition of a lack of knowledge and skills to implement new teaching and learning methods can be seen in Sinalart's (1999) report. Whilst there a few academics and teachers who may be familiar with the new teaching and learning theories and the associated methods, it is not sufficient to make a critical mass to drive the reform from the bottom up, a process inherent in the pilot study's school-based immersion philosophy. There is an urgent need to inject new knowledge and skills to a larger percentage of teachers and teacher educators and create a critical mass of reformers.

The teachers in Thailand range from very good (master teachers) to very poor (certificate or untrained teachers). Many of the current teachers received their training more them 20 years ago and have not undertaken much professional upgrading since. The Education Reform plan to introduce teacher registration has seen some activity in professional development programs (PDPs). However, the majority of the existing PDPs do not address the learning reform initiatives and there is currently no mechanism for monitoring them for their appropriateness or advising teachers on the ones that meet the requirements of teacher registration. Whilst there is some enthusiasm and capability in the teachers to learn and adopt student-centred learning, it will require a more sustained and comprehensive level of training.

4.2 The Teacher Development Needs of Teachers

For teachers to develop the competencies necessary to implement student-centred learning, they will need a good understanding of the following aspects:

- *Types of New Knowledge.* The lack of sufficient understanding of the nature and types of knowledge outlined in Appendix 1 that teachers ought to foster will make it almost impossible for the new model of learning to succeed. Even if teachers learn new strategies, they will still teach technical knowledge with its emphasis on computation and rote memorisation. It is important for the teachers to have a good understanding of the multidimensional nature of knowledge they can teach before they can identify appropriate strategies. A considerable amount of work including research, consultation with the Ministry of Labour, professional bodies, Rajabhats and the Faculties of Education, local communities and international collaboration, needs to take place to develop the range of knowledge types that is deemed to be appropriate for the next generation of citizens in Thailand. Appendix 4 provides

examples of the range of knowledge types for Science Education for Grades K-10 in Australia.

- *New Learning Strategies.* Whilst many teachers have heard the language of new teaching approaches such as student-centred learning, they do not have a deep understanding of the principles and assumptions underpinning the various strategies. This is partly because of a lack of recent international literature on new teaching and learning approaches available in Thailand. The recent developments in teacher competencies and human learning suggest that teachers should have a range of approaches and associated strategies that they can use to encourage knowledge construction in children. There is a need for teachers to appreciate the fundamental principles that drive the new approaches to teaching and learning such as constructivism, critical reflection, and transformation. The learning environments should provide a balance between challenging and supporting students.

- *Assessment and Evaluation.* Understanding the nature and types of knowledge and the associated learning strategies that teachers need to develop also includes the appreciation of correspondingly appropriate assessment and evaluation strategies. It is important to ensure the feedback to students reflects the objectives of the learning experience. The current understanding of assessment models and procedures used in Thailand rewards conformity, memorisation, recall and knowledge reproduction. Teachers need a significant amount of training and guidance in new and alternative methods of assessment. Th ability to appreciate the new assessment methods will depend on teachers' understanding of the types of knowledge and skills they wish to develop in their students. It's a circular interactive process that has the following sequence: types of knowledge ϖ learning strategies ϖ resources ϖ assessment.

- *Integrated Teaching.* Teachers need to expand and deepen their subject knowledge in order to use integrated teaching. At present most secondary teachers in Thailand major in only one teaching subject. To foster the integrated teaching competencies, it may be useful to consider at least two teaching subjects in the revised teacher training programs. Alternatively, the school may develop teaching teams to facilitate the integrated approach to teaching and learning.

- *ICT Competency.* This aspect of teacher competency is not directly related to student-centred learning but a number of activities associated with this approach rely on ICT-based learning. Teachers need to continuously upgrade themselves and search for new and exciting material for their students and be able to develop similar search skills in their students. Teachers therefore need to be competent users of ICT in teaching and information retrieval. The Education Reform process should integrate the development of ICT competencies into the development of student-centred learning competencies in teachers.

- *Mentoring.* The changed relationship between students and teachers and the new role of teacher-as-facilitator associated with student-centred learning approaches require a new set of competencies for the teacher to be effective. The ramification of such an approach could be very challenging and destabilising for many teachers who are used to an authoritarian teacher-centred approach. They therefore will

need mentoring support. The pilot project discussed in Chapter 2 (Section 2.1) adopted a mixed method involving school-based mentoring by a Master Teacher and regional seminars conducted by Rajabhats' staff to overcome the need to take teachers out of schools during teaching time.

- *Action Research.* The ability to self-evaluate or engage in action research for self-development is not easy but essential for continuous professional development. This is not something that can be developed in a short time, thus development of such attributes needs new approaches such as ongoing mentoring over a long period of time.

4.3 Conclusion

Given the very limited exposure of teachers, administrators and teacher educators to the new approach to learning, there is a need to develop more in-depth understanding in all of the above aspects of student-centred learning. For this to happen, there has to be considerable amount of investment in training workshops and continuous long term support for the new practitioners. To guide the training workshops, a comprehensive model of teacher competencies should be developed (see Appendix 5 for a sample of teacher competencies). International work on teacher competencies suggests that, at all levels and in all subjects, there are some generic competencies and some specific to the level and/or subject. Such a detailed listing of competencies will also assist in the monitoring of the mastery of student-centred learning competencies by the teachers.

Workshops are just one aspect of the broader issue of teacher professional development. An assessment of the services that are currently available and the issues relevant to teacher development are discussed in Chapter 5.

CHAPTER 5 EDUCATION REFORM AND THE DELIVERY OF TEACHER DEVELOPMENT

Following on from the previous chapter which identified the teacher development needs associated with the Education Reform agenda, this chapter critically assesses the currently available training services for their capacity to develop and deliver training to teachers and principals in the new approaches to teaching and learning. Based on this assessment of capacity, the teacher development needs identified in Chapter 4 are reassessed in terms of issues that need to be addressed.

5.1 Overview of Services

The services available include 36 Rajabhats, 229 Faculties of Education in Universities, statutory bodies such as the Institute for Promotion of the Teaching of Science and Technology, the media outlets of Education Television and Radio, Open Universities and several non-government organisations involved in teacher training. The credit courses offered by the above institutions range from Certificate in Education programs to Master degrees. Some of these institutions also offer special professional development programs in education as well.

The courses are delivered either through distance learning, traditional college-based training, and intensive site-based training workshops. The distance learning mode includes mainly print-based learning supplemented with audio- and video-tapes and some on-line learning and television-based learning which includes satellite broadcasts. The traditional model of college-based learning is often combined with intensive on-site seminars conducted at schools. It seems that there is some understanding amongst the local providers who use different modes of delivering instruction.

5.2 Critical Review of Services

A large percentage of distance learning material is print-based, thus there are more than adequate facilities to print material. The capability exists within the distance learning institutes as well as in the private sector. With regard to distance education by electronic media, the communication infrastructure and technical equipment is also available but may need some upgrading. For instance, the current television cameras on wheels with boom microphones will not be useful to capture real classroom situations easily. The quality of the images may also need improving. New more versatile equipment may have to be acquired to supplement the existing equipment. Also, if asynchronous transmission of instructional material is planned, there has to ways of recording and replaying the material at the receiving end. While the equipment is satisfactory for developing and delivering the types of material currently used by the distance teaching institutes, it will need to be upgraded if the new interactive real-time, rapid feedback design is adopted.

The Rajabhats being close to the community and spread all over the country have the advantage of access to teachers in schools whereas the Open Universities and the Education Television and Radio have the capacity to reach out to rural area through

the use of technology. The Open Universities also have regional learning centres where they conduct intensive seminars to supplement their distance learning. The two types of institutions jointly have the capacity for delivering a hybrid model of high quality inservice training for teachers and principals. With some additional investment in the latest equipment, the capacity will be greatly enhanced. The most significant investment will be in developing human resources capacities such as instructional designers and television programmers. Judging from the quality of current television programs, considerable upgrading will be needed.

Despite the various reports citing high speed Internet as being the preferred choice to support ICT expansion, the interactive television delivered via satellite communication may be a more viable option. There is need to explore alternative methods of delivering and using learning material to train the inservice teachers especially with the recent advancement in communication technology. The traditional computer lab model may not be appropriate for Thailand because it restricts the natural use of the ICT facilities and consequently does not foster a close relationship between the community and its schools, which is highly valued in Thai culture. The concept of learning centres that encourages parents, teachers and school administrators to all converge at the learning centres and become a community of learners may be more appropriate. It provides a very rich context for teachers and principals to experiment and discuss new innovative thinking. Such a centre can act as a central point for information collection and dissemination and encourage interactivity and critical linkage between the theoretical readings and practices.

Perhaps the biggest gap in the capacity of current systems to provide quality training to teachers and principals is in the understanding of the new approaches to learning and educational management. The faculty members of the teacher training institutes are not conversant with the principles and practices of new teaching and learning approaches. Some material reviewed was basically old content in a new format with little interactive process. Other teacher training materials reviewed were outdated and in need of significant input about new teaching and learning issues, strongly suggesting a need for intensive training on new technologies and instructional design that would need to be sustained through long-tern support from a team of experts. No matter how the material is delivered, print or electronically, the instructional design aspects of the learning material and the quality of content are something that may need serious revision and injection of new ideas and processes if the material is to support the training required for the Education Reform.

Finally, there is concern with the support services and appropriate supplementary literature available to those who engage in distance learning. Resources such as library material, computers and other electronic equipment are not readily assessable but are absolutely essential for the successful development and delivery of high quality training.

5.3 Issues Relevant to the Provision of Preservice and Inservice Training in Student-Centred Learning.

In order to satisfy the teacher development needs related to the Education Reform of introducing new teaching and learning methods and identified in Chapter 4 (Section 4.2), a number of issues need to be addressed.

These issues are:

- *The lack of qualified local experts*. This is perhaps the most significant issue. As noted by Sinlarat (1999) there is lack of knowledge and skills of current innovation in teaching and learning amongst not only the teachers but also the teacher educators. Fry (1999) confirms this by saying that even though the teacher trainers have post-graduate qualification in various areas the qualifications need to be treated with caution. Discussions with the teacher trainers from around the Kingdom provided further confirmation of the urgent need to upgrade the knowledge and skills of the teacher educators before they can train the teachers in new teaching approaches such as the student centred learning. This gap in the knowledge and skills associated with the new approaches to teaching and learning is further confounded by a lack of capacity and enthusiasm amongst the staff at Rajabhats and the Faculties of Education in the Universities. There is an over emphasis on local literature which can limit innovations. If Thailand wants to develop its competitive advantage in the global economy, then it is absolutely necessary for it to redress the above and introduce international best practices and the associated research and literature.

  The World Bank through its project (IBRD Loan 4052 TH) invested significantly in improving the quality of academic staff in the Rajabhats. The project focussed on training teachers to enhance subject content knowledge, teaching of agriculture and other vocational expertise and, in a limited way, teaching learning methods. The need identified by the World Bank still remains as a gap and an impediment in improving the quality of education in Thailand. Whilst the Rajabhats have large Faculty numbers, many of these staff are involved in other new programs now offered by the Rajabhats. It was not possible to separate the staff involved in teacher development from the total numbers but it appears that many of the incumbent staff in Rajabhats do not have the capacity to train teachers in student-centred learning. Some Rajabhats have special programs offered during the weekends for teachers to upgrade their skills. Theses programs are becoming popular since the announcement of teacher registration requirement. However, given the low level expertise of the Rajabhat academics many of these programs are not adding value to teachers' professional ability. Rajabhat staff need extensive training, both short and long term to make them capable of implementing the inservice training of teachers and principals. It may also be useful to support some Rajabhat staff to undertake postgraduate training overseas to expand their knowledge and skills and align them and their colleagues and institutions with international practices.

  Given large number of teachers in the Thai school system who are distributed across the country and often not easily accessible, it is essential that a critical mass of local experts be training to act as mentors. They would provide first the momentum for the reform and second on-going support for teachers in schools. A minimum of 10% of the total teacher population (approx 70,000) is a good rule of thumb but geographic location and other constraints need to be considered.

- *Current preservice and inservice courses*. These are outdated and where new preservice programs are being introduced (See Section 3.3), they are very much "old wine in new bottles". Where some attempt has been made to address the new

approaches to teaching and learning, it is very simplistic which limits their impact. The limited activities associated with student-centred learning thus far have focused on skills development, which will not provide professional competence. Professional competence is more complex as it requires teacher to make decisions about the content, the teaching approach, assessment types etc. Teachers need to be able to make choices in light of the children's ability, available resources etc. Thus the current approach of skills development needs expanding to include knowledge and skills that underpin professional competence.

Inservice teacher training is not new to Thailand but the purpose, content and process used in the past and in some cases even now are very different to what is required for a knowledge society in a market driven world. In the past classroom innovation and pedagogical experimentation was not expected of teachers and hence not encouraged. The mentality thus fostered is one of dependency on external, mainly the government-funded teacher training programs. Professional disposition for self-development through action research was never considered or encouraged.

There is a general perception amongst all stakeholders (including ORIC) that a major review and reconstruction of the pre and inservice teacher-training curriculum is urgently needed. This was evident in a close survey of current courses offered in the teacher education programs by two universities. It showed a high degree of vagueness at each level. There seems to be an over emphasis on local, traditional, socio-cultural issues. Whilst these are important it does not support the knowledge, skills and disposition necessary to educate citizens that can effectively participate and contribute to Thailand's growth. The vagueness prevented assessing the progressive development of complex knowledge over the four-year periods. Also a balance between the local and international knowledge need to be maintained to avoid becoming incestuous.

The nexus between theory and practice is not fully appreciated. The over reliance on learning by doing undermines the capacity to transfer knowledge and skills and function as professionals. There is a serious need to translate learning theories into simple and practical language. The current highly abstract approach to teaching theoretical concepts, which make it difficult for teacher at the classroom level to see value in theory, and thus unintentionally devalued the theoretical knowledge and skills.

- *The dominance of local knowledge*. Thailand has largely depended on mainly local literature for it education development. This lack of access to international literature on new innovative teaching learning methods has contributed to the decline in quality of teachers in Thailand. There is need to support a core group of people to receive international training who then will act as a critical mass to propel the reform initiative. To support the work of this core group some key international literature need to be translated into Thai language and disseminated to teacher educators and teachers. Also it will be necessary to provide equipment and services such as Internet to enhance teachers' ability to accesses international literature and communicate with other teachers in the country.

- *Modes of delivery*. Many of the existing facilities, particularly those used in distance education, need significant improvement to their management and technology infrastructure while the content, quality of design and production of materials are also in need of attention. As part of the teacher development initiative, a thorough assessment of the optimum delivery system needs to be undertaken to maximise efficiency and to increase access. Considering that teachers cannot be easily taken away from the classroom and that the concepts associated with the new approaches to teaching and learning are complex, alternative models of delivering training need to be explored which can provide and a long-term support to nurture and expand the expertise of teachers. Some possibilities introduced in Chapter 2 (Section 2.2) and elsewhere are reproduced here for convenience:
    - Delivering information about the new concepts and practices via ICTs;
    - Facilitating the development of professional networks to provide self-help in the support of continuous learning and the professional development of teachers and school management.
    - Local Learning Centres accessible to students, teachers, administrators and parents.

- *Mentoring*. The school-based mentoring requires the master teacher to share their special expertise with other teachers. This mentoring activity has to be done either before or after the classes begin for the day. This is an additional task for the master teacher for a nominal amount of money. Also master teachers are those who have demonstrated expertise in any new teaching learning strategies. The problem with this approach is that the master teachers can only discuss and teach the one method they were given the award for. Because many of them learn the new approaches by themselves there is always the risk of not having sufficient in-depth understanding of the principles behind the process. This is good start but it needs to be developed to a level where the practices and underlying principles are understood so that the teachers can adapt and innovate, an activity central to professional development. School-based mentors will need to be well-trained master teachers and their roles institutionalised as part of their workload. Alternatively, an R&D team comprised of a master teacher and Rajabhats staff can do on-going mentoring to reduce the load on the master teachers.

- *Teacher Competencies and Teacher Registration*. The development of a list of required competencies such as in Appendix 5 will be an important step in establishing a teacher development culture as it will provide a basis for evaluating and registering teacher training and professional development programs and criteria for Teacher Registration.

- *Management Support and Monitoring***.** The school management (Principals, School Boards) and inspectors from the MOE and the DGE need to review their roles and monitoring guidelines. Failing to do so can seriously hinder the implementing of new learning approaches by teachers.

- *The Role of Government*. The unfaltering support of the Government is essential to the success of the reform agenda. Thus far, the constant changes to the reform plans have adversely affected the policy development and will be disastrous if continued during the implementation stage. Consultations and dialogues need to

happen before public announcements are made but once a position has been accepted and announced to the public it should be maintained. The constant change has caused a great deal of anxiety amongst teachers, parents and other stakeholders.

To sum up, the major constraints to the design and delivery of teacher development programs are:

- Lack of necessary knowledge and skills about new learning strategies at all levels
- Lack of accreditation of the current teacher training and staff development programs offered by various providers
- Lack of a critical mass of local experts to spread the new knowledge and skills throughout the teachers in the country.
- Lack of suitable alternative model for inservice training
- Lack of any teacher registration and/or teacher incentive framework
- Lack of a plan for national implementation and indication of support and commitment by the Government

Before any national roll out of the new teaching learning is considered, it is absolutely essential that a critical mass of competent educators and teachers are available. To achieve this there is considerable amount of work yet to be done in developing the knowledge and skills and developing systems that will be capable of providing long term support.

CHAPTER 6 TEACHER REWARD AND INCENTIVE SCHEMES PROPOSED IN EDUCATION REFORM

6.1 The Current System

6.1.1 Salary and Promotion Incentives

When individuals join the teaching service, they are placed on a scale that corresponds to their qualifications and prior experience. The teacher salary scales, Teacher 1-2 and Ajan 1-3, map onto the Civil Service Commission salary structure. There is a total of 8 different scales (5 for teachers and 3 for tertiary instructors) and within each scale there are up to 20 levels. Progress through these levels is solely determined by length of service and having satisfactory annual confidential reports. While there is provision for individual teachers to jump a scale, the procedures associated with such progression is complex and based on the recommendations of the school principal and the managing authority such as the ONPEC for primary teachers and DGE for secondary teachers. To progress from Ajan 2 to Ajan 3, teachers have to meet an additional requirement of conducting academic research and writing a paper.

The Teacher Civil Service Commission, a division of the Civil Service Commission within the MOE, in consultation with DGE and ONPEC, has developed the criteria for promotion and supervision. The criteria used for promotion tend to concentrate on "personal discipline" matters such as attendance and moral values rather then on classroom teaching performance. With respect to the latter, teachers are encouraged to focus on drill and practice until their students achieve mastery in replicating skills and procedures by following highly prescribed tasks and procedures that are closely monitored for conformity. Teachers' rewards and promotions, under this model, are based on how well a teacher trains students to "jump through the hoops". This is judged by students' achievement in objective tests that focus on memorisation and recall. Learning innovations by teachers are discouraged and conformity is rewarded. In recent years, there has been some attempt at revising the criteria for promotion to include indicators of good teaching practices but they are still very vague, unclear and need a considerable amount of additional work.

The base level salary for teachers with a Bachelor degree is 6,360 Baht and those with a Masters degree are 7,780 Baht. This increases with the years of experience. The opportunity for jumping a scale is much higher in other government sectors and consequently, on the whole, teachers' salaries are considered lower than that of other government employees. A bad confidential report can stop or delay promotion but a good one does not necessarily accelerate promotion. For example in 2001, out of a total of 476,761 teachers, only 8,655 were promoted while 76,957 were considered good teachers but were not promoted. They were honoured with the title of Master Teacher and received a small allowance from ONEC, not the MOE, to assist them in developing their practices further. The relatively low salary coupled with fewer opportunities for accelerated promotion makes teaching a very low priority vocation amongst the brighter secondary students.

There are some ad-hoc schemes that provide rewards to teachers. For example, scholarships to be trained as a Master Teacher at the IPST or an invitation to participate in innovative projects such as the King's project to provide learning through distance learning. However, the details of the objectives, procedures and outcomes of these projects were not readily available.

6.1.2 The Teacher Education Reform Office (TERO) Schemes

Given that Thailand has a large number of teachers already in the service with a low turnover, motivating them to upgrade their competencies is a serious concern. This was addressed through the TERO program (TERO, 1998a, 1998b), which was initiated by ONEC in 1997 to address the rapid decline in teacher quality and to improve the morale in and status of the teacher profession. The project under the leadership of Professor Chulavatnatol made some very valuable recommendation for improving teacher quality through innovative incentive schemes (Chulavatnatol, 1997). However, a lack of budget due to the 1998 Asian financial crisis prevented the implementation of many of the recommendations despite the recognition of an urgent need to reform the working conditions of teachers. A lack of communication between ONEC and the MOE has caused some tension as to the ownership of the TERO project. Since MOE staff were not involved in the project, they have been reluctant to implement the recommendations. Also, the reward scheme in some ways undermines the MOE promotion and reward procedures. Both of these aspects have affected the continued implementation of the recommendations after the completion of the project

The TERO scheme initiatives were a significant shift from traditional practices. The proposed model of teacher incentives contained three elements: a salary supplement for outstanding teaching, financial support for a school project and financial support for the school. The rewards under the TERO scheme were large enough with sufficient timelines to ensure that useful and productive outcomes were achieved. The program was expected to provide awards to 1,200 teacher each year for three years to build a critical mass of good teachers. Together with the monetary awards, it was argued that these teachers would enjoy a higher status amongst their peers and parents due to the national recognition. Thus far, less then 30 teacher have received the awards and it is not clear how many schools received funds to experiment with innovative teaching methods. The level of success of this project not clear as it was implemented during the Asian economic crisis. In some ways, the TERO scheme complements the teacher incentive scheme framework outlined in Appendix 6 and discussed in Section 6.2 below, which provides different options for considering teacher incentive schemes.

The proposed academic coupon scheme provided under the TERO project (TERO, 1998a) was also very novel and encouraged teachers to become self-directed in determining how they wished to undertake professional development activities. Teachers had to engage in some form of professional development within two years of receiving the coupons or they lost their entitlement. Such initiatives are consistent with the idea inherent in the Education Reform that professional development is the individual teacher's own responsibility. However with no quality control on the professional development courses offered, there is a risk that teachers could participate in courses that are not relevant to the new approaches to teaching and learning.

6.2 Proposed Incentive Schemes in the Education Reform

6.2.1 Salary Incentives

Under the Education Reform agenda, the Teacher Development Task Force has developed a five scale teacher classification framework for a new salary structure. The classification ranges from *assistant teacher, teacher, senior teacher, expert teacher* to *senior expert* and within each scale there are a number of incremental levels. An assistant teacher salary is 8,190 Baht and a teacher's salary is 10,080 Baht. Only promotion to senior teacher, expert teacher and senior expert teacher has monetary rewards. The increase in salary is not guided by any job evaluation. Rather it is related to the proposed 4+2 or five year Bachelor programs for teacher training because, in Thailand, the length of training required to enter a profession determines the starting salary in that profession. Details of how teachers may progress through the different levels within a single scale of classification and/or across scales of classification are not clear. It is also not clear if there is provision for accelerated promotion based on merit or demonstrated performance.

In accordance with the new teaching practices associated with the Education Reform, there is a need to develop clear criteria for judging teachers on demonstrated performances to qualify for the accelerated increments and promotions. The criteria developed should focus more on the specifics of teaching quality rather than the current focus on attendance and pastoral care. In concert with this, there is also a need for further work in developing a decentralised model of management and monitoring, complete with functional and operational aspects. For example, local and regional authorities need to be involved in the process of judging and recommending rewards. Balanced against local input, it may be useful to develop an Education Management Information System (EMIS) to capture teacher profiles across the country in order to moderate the application of criteria of quality teaching and to ensure equity in the process. Also, all the above activities needs to have clear articulation with the work of various other task forces involved in reforming teacher development such as teacher competencies, teacher registration guidelines and the work of ONES.

6.2.2 Other Incentives for Preservice Teachers

The more complex and diversified role of teachers associated with the Education Reform warrants the selection of good quality students into the preservice programs. In order to achieve this, it is proposed that the Government will provide scholarships and guarantee employment. Each of these initiatives is discussed in turn.

Scholarship Scheme

Under this scheme, the Government will provide scholarships for all teacher education recruits in the future. There are a number of critical operational aspects of this initiative that need consideration:

- How many such scholarships will be made available each year?
- How many years will such a scheme operate? The multiplying effect of the scholarship program in the second, third and fourth years will have significant cost implications.

- The rationale for the scholarship has not been developed. Will all the teachers in the primary and secondary levels be entitled to these scholarships?
- Will the funding for these scholarships be an additional budget or is it to be absorbed in the current MOE budget?
- What proportion of the scholarship costs will be covered?

Employment Guarantee

The government also intends to guarantee jobs for all future graduates from the teacher education programs. The current employment statistics on teacher education suggests an oversupply in the primary education sector where only one in ten graduates gets a teaching job.

- Are there any guidelines to decide who gets the job?
- Has there been any consideration to link the rural teacher shortage to the guaranteed job scheme?

Both the above two initiatives are fraught with high risk. The cost implications are huge and is the Government ready to underwrite it? Discussions with various senior management staff suggest that the cost projections have not been undertaken or approved by the MOF. Further, as indicted earlier, the proposed five year BEd and the six year BSc + BEd programs will increase the entry salary for teachers as will other aspects such as incremental creep and accelerated promotion.

Other Considerations

The current recruitment process for preservice teacher education is based solely on the final year examination marks at secondary school. Given the importance of the affective traits of teachers needed to utilise student-centred learning, additional processes such as interviews may be useful to supplement the process of using university entrance examinations. In many western countries, interviews are often used to select students for many courses. For example, some universities in Australia interview their prospective students for the Medicine Programs and some teacher registration authorities interview the prospective teachers.

6.2.3 Other Incentives for Inservice Teachers

Despite the recognition that the greatest impacts of the Education Reform will depend on the willingness of existing teachers to improve their teaching skills, little work has been done in conceptualising incentive schemes for inservice teachers. The Education Reform faces the challenge of engaging in creative thinking and developing incentive schemes that will encourage inservice teachers to become involved in training and upgrading themselves.

The proposed National Framework for Teacher Development should link teacher qualifications and continuous professional development requirements to incentives such as monetary rewards plus other promotion options. Such a framework will make it transparent for teachers to choose how they wish to invest their time and effort in developing their professional skills to ensure that they meet the minimum standards to maintain the currency of their Teaching Licence. By doing this, it becomes an incentive for teachers to engage in developing themselves professionally.

For the more enterprising teachers, the framework will provide information as to how they can plan and improve their status within the teaching profession. All staff development activities should be credited and tied to progression points on the teacher qualifications within the framework.

As noted by Pitiyanuwat and Wiratchai (1999), there are indicators other than salary that can influence teacher's quality and effectiveness. They have identified job assignment, teacher supervision and development, motivation and participatory administration/management, teacher performance appraisal, workload and quality of work, school and professional commitment, job satisfaction and career progress. It appears that the current work in teaching incentive schemes has considered such indicators in formulating the incentive schemes.

6.3 Performance-Based Incentives: A Model to Consider

Incentives and rewards based on performance is a model that is widely used in many developed and developing countries that are undergoing education reform. Such a model supports the emerging work practices in many other professions where evidence of demonstrated outcomes is a pre-requisite for the incentives to flow. One significant advantage of such models is that it will encourage teachers to be continuously innovative and experimenting with new ideas which are attributes of life long learning. It also ensures that teachers who receive the reward have already made a significant contribution to the teaching professions by delivering a product or service for which they are rewarded.

As note in Appendix 6, performance-based incentives do not necessarily have to be attached to salary increases. Increasing salaries is not easy for many developing countries given the limited financial resources available to them. The other indicators such as those identified by Pitiyanuwat and Wiratchai (1999) above should be considered as alternative ways of promoting teacher quality and effectiveness. It should perhaps be linked to the current thinking behind the formulation of teacher development incentive schemes.

The performance- based incentive schemes may also provide an alternative to increasing the length of the preservice training as a means to increase the starting salary level for teachers. After a four year degree program, teachers could be invited to engage in research and teaching innovation and based on their performance, they could be given accelerated increments, which can rapidly take them to the salary equivalent of a six year trained graduate. The advantage in this model is that teachers would have already demonstrated their contribution to the teaching and learning innovations. In the current model, an individual can remain in training for six years, not make any significant contribution and yet receive the salary for a six year trained teachers.

Furthermore, a performance-based model for incentives could also be used to reward inservice teachers who participate in short staff development courses. If teachers participate in approved courses, they could be rewarded with increments or, depending on the way the PDP courses are packaged, they could also receive credits for University studies. Teachers who take the initiative to engage in professional development that is approved by ONES or the Teacher Licensing Commission, should

receive some incentive for taking that initiative of upgrading their professional competencies. A performance-based model does not just apply to individuals. Schools that demonstrate evidence of meeting the set standards could receive additional grants as an incentive to continue to do better.

CHAPTER 7 MONITORING AND ASSESSING THE EDUCATION REFORM

This chapter puts forward some proposals for monitoring and assessing the acquisition of mastery in student-centred learning competencies.

7.1 Introduction

Other then the broad guidelines for monitoring the quality assurance and the outcomes of the Education Reform, very little work has been done in terms of developing a detailed monitoring and assessing system to determine the level of mastery in student-centred learning competencies acquired by the teachers. The current evaluation reports have considered the Education Reform at a macro level only and not dealt with classroom teaching capabilities (ONEC, 2001). While such data is useful, it does not provide direct feedback to teachers on their teaching performance. Further the current evaluation is conducted separately by the MOE and ONES with very little dialogue between the two organisational units. This is costly, time consuming and unnecessarily interrupting the teaching and learning processes in schools. There is a need to consolidate and carefully develop a clearly articulated framework that is transparent and made available to the public. It should include the various factors that could influence teachers' ability to acquire student centred learning competencies. It is important to realise that the underlying philosophy behind monitoring and assessing is about helping to improve the quality of teaching and management services provided by the MOE. It is not about policing people within the teaching profession.

7.2 Some Proposals

7.2.1 Organisational Aspects

It may be useful for ONES as a service organisation with data analysis capabilities to be managing the process. In accordance with the decentralisation of management inherent in the Education Reform process, ONES should consider how the assessing and monitoring might also be decentralised so that organisational units at different levels can themselves implement the monitoring and assessing tools and report to ONES. Also, given the broad scope of the responsibilities that ONES has, it would be useful to have a unit within ONES that focused exclusively on the assessment and monitoring of all teacher development activities. Alternatively, ONES could facilitate the design, development and analysis aspects while DGE and ONPEC could facilitate the implementation of the monitoring and assessing activities. It is important that personnel at ONES remember that they are there to provide a service to other departments and thus should work in close consultation with them to obtain input into both the design of the monitoring and assessment tools and the types of analysis to be performed on the data and the reports to be developed.

7.2.2 Operational Aspects

Given the complexity of determining mastery of student-centred learning, it is proposed that a multi-method and multi-level approach be adopted that uses both qualitative and quantitative data from all stakeholders. The system should also cater

for internal and external audit requirements. The following issues provide a basis for operationalising this monitoring and assessing model.

- *The framework.* A detailed framework for monitoring and assessing student-centred learning should be a priority. This is necessary to avoid the current duplication and competition amongst the various departments. The framework should include
  - all the significant factors that need to be assessed and monitored
  - why they need to be assessed
  - how they will be assessed
  - who will be responsible for assessing
  - the frequency of data collection
  - the times at which data will be collected
  - the types of data that will be collected
  - the times at which analysis will be undertaken
  - the nature of the analysis
  - the reporting times
  - the potential audience for the reports
  - the action to be taken after dissemination of the reports.

  See Appendix 7 for a sample of such a framework.

- *Macro and micro levels.* The problem with the current broad-based evaluation is that it tries to focus only on macro issues. It is important that monitoring and assessing tools capture both macro and micro issues. Thus there is a need to carefully develop clear and precise indicators of mastery of student-centred learning because these indicators form the basis for items in a survey. In the pilot project (Piya-Ajariya, 2001), some initial work on developing indicators to monitor and evaluate student-centred learning was carried out. This instrument provides a starting point however there is a need for significant amount of further refinement to ensure all the key aspects of student-centred learning are covered. Also the pilot project instrument targeted mainly quantitative measures while the new model should also include qualitative indicators. Both sets of indicators need to be tested for validity and reliability to ensure that the items and questions asked do measure the correct indicators. Such psychometric information provides credibility to the results. It will be useful for those who develop the monitoring and assessing tools to study similar tools used in many other countries.

- *Involving all stakeholders.* Since the Education Reform is promoting decentralisation the monitoring and assessment should adopt a "360$^{)}$ evaluation", that is seek information from students, teachers, parents, school administrates and the Local Education Authority (LEA) to develop a comprehensive understanding of the success of the teacher in implementing student-centred learning. The different sources and different types of feedback should be analysed both separately and collectively to assess the competencies of teachers in using student-centred learning. For instance, at the school level, qualitative data could be used for improving teacher performance or school or parental support for enhancing student-centred learning. The LEA could use the data for planning teacher development activities or parent education to solicit their participation and the MOE should be able to use that LEA data for their National Planning and

progressive reporting process. The decentralised process should be reflected in the monitoring and assessment framework.

- *Internal and external monitoring.* The design should consider internal and external monitoring. The concepts of Internal and External although used in the monitoring and evaluation in the reform initiatives are not fully understood. Internal monitoring and assessing is conducted by organisational units on themselves. With external monitoring, teams from outside the organisational units conduct the monitoring and assessing. The latter is to ensure that the internal monitoring is fair and accurate. The processes and frequency used for the two types are also different. Both are equally important but the internal monitoring is more useful as it provides quick feedback to those who are being monitored so that they can improve by trying alternatives. Teacher's self-evaluation, and artefacts such as teaching material and students' work are examples of data sources used in internal monitoring. External monitoring is done through large-scale surveys and visits by audit teams.

- *Sampling.* For external monitoring, careful sampling must be undertaken. A representative sample of the overall population must be identified and the sample should be rotated so that participating in the monitoring and evaluation does not become a burden on a few only. The sampling detail in the current monitoring and evaluation process is not known. Often selective sampling is used which may provide a different picture to what the overall country experiences. A good decentralised system can be of significant help in accessing a representative sample.

- *Data collection.* There is also an urgent need to develop a detailed process of data collection and data coding (what and how to collect data) to maintain high degree of validity. Every effort must be taken to ensure accurate and honest reporting and coding. This could be done at different levels (decentralised) but made available to stakeholders at all levels. Information such as subject type, gender, geographical location, size of schools, types of training provided etc could all be included in the survey or data collection instrument. Such rich data will allow a range of different transactional analyses.

- *Data analysis.* It is important to determine levels at which the data should be analysed to provide useful feedback to classroom teaching, school administration, LEA support, provincial and National planning. Perhaps the most critical aspect of any monitoring and assessing system is the interpretations drawn from the data. This is particularly important as there is the potential for distorting data through statistical manipulation. The interpretation and dissemination of the data should also be carefully considered and reporting should reflect the real situation of teacher quality.

- *Education of stakeholders.* In order for a complex monitoring and assessment process to be successful, all stakeholders including the school administrators, the LEA personnel, teachers and ONES and Teacher Professional Council representatives need to be thoroughly educated and trained in the concepts and processes involved. All parties should be advised of the major differences between previous monitoring methods and the new one. For example, under the

new model, one of the aims of monitoring is to identify weakness and strengths so that they can be addressed as opposed to identifying teachers who are not confirming the rigid guidelines proposed by the MOE.

- *Incorporation of EMIS.* Considering the magnitude of the proposed task, it is almost inevitable that an EMIS system should be included as part of the development of a monitoring and assessing model. This should be developed and installed in close consultation with those who develop the framework and those who develop the decentralised management systems. An EMIS system will significantly increase the efficiency of the monitoring and assessment process. A well-planned EMIS system should give ownership to stakeholders at various levels to input data and analyse achievements.

- *The importance of feedback.* As part of any monitoring model, dissemination of the findings and follow-up activities need to be planned. The results from the monitoring and assessing activities should be seen as providing feedback to teachers for their professional development, to THE MOE for their planning etc. Evidence of how that information from the monitoring and assessing tools are used will empower those being monitored to be more honest in their reporting. Such integrity will help Thailand's teachers to become high quality teachers. It is important that participants see the annual results not as an end of the monitoring and assessing process but as part of an ongoing cycle of continuous improvement.

The monitoring and assessing model should be linked with the National Teacher Development Framework. This way the feedback loop has a direct link with key objectives of teacher development under the reform.

CHAPTER 8 ISSUES TO BE RESOLVED TO SUPPORT TEACHER DEVELOPMENT UNDER THE EDUCATION REFORM (Recommendations).

This chapter brings together all of the issues identified in the report and highlights the key issues to be resolved in order to implement sustainable teacher development to promote student-centred learning

8.1 Introduction

To successfully introduce student-centred learning and the associated administration and management practices is a huge task. The Government of Thailand through its various organisational units such as the ONEC, the MOE and OER has expended significant energy in order to conceptualise and develop documents for consideration by the parliament. However, there is still need for further work by the various task forces to clarify and refine the documents. Most of the documents are policy documents, which need to be reviewed in light of how and whether they can be implemented.

This report has reviewed a number of factors that both individually and collectively are essential to support the professional development of teachers in their endeavour to develop the skills necessary and to change their beliefs in order to implement the new teaching and learning approaches including student-centred learning. These factors include administration and management, teacher incentive and career schemes, teacher licensing and quality assurance, distance education and information communication technology, learning resources and an EMIS. These issues are discussed in terms of those aspects, which need attention if the Education Reform agenda is to succeed.

8.2 General Aspects of Administration and Management

- While a lot of work has already been done in this regard, many of the current policies may need revising and ratification by other government departments such as the MOF and the CCC. In many cases the policies developed thus far lack clarity and detail for them to be taken to the next step of developing implementation plans. There is a need to inform all stakeholders why a new management model is necessary and how it will improve the learning outcomes of students. The complementarity of the student-centred learning and the new management models in helping change the underlying mindset needs to be explained and discussed in detail as recommended practices such as risk taking, empowerment, innovation and making informed decisions may not be ones with which some significant stakeholders are comfortable.

- Complementing the policy work should be the development of a Manual of Policy and Procedures (MOPP). Such a manual will ensure all parties understand the policy guidelines and the procedures they should follow to support the work of their respective unit. The MOPP should encompass all of the teacher development

activities involved in the Education Reform. It must be noted that any such MOPP will need to be congruent with other developmental work carried out under the reform agenda such as decentralisation. Also the MOPP will need continuous revision and updating as the project progresses. It would be useful to develop the MOPP together with the policies, as it will help illustrate how the policies will work when implemented. Such detailed documents may also inform parliament during its deliberations of Education Reform issues. So far, there has not been any consideration of this, but it is absolutely essential for the new management model to be successful. Particularly in the light of the vagueness and duplication of roles currently evident within the education sector in Thailand.

- There is an urgent need to develop and National Teacher Development Framework (NTDF) to provide the "unifying mechanism" sought by the National Education Act. Such a framework will ensure that the various task forces and organisational units do communicate with each other as they all have to ultimately link their work to the framework. The framework should not only consider structural but also functional issues of the different organisational units involved with teacher development. Considering the problems encountered by the current fragmented model, the NTDF will provide coherence and efficiency as well as significantly enhance the governance of all teacher development activities in the Kingdom.

8.3 Decentralised Management of Teacher Development

- Similar to student-centred learning where the location of learning is situated with the learner, the complementing management practices must also be relocated to the regional offices. The role of the central office is one of facilitating the management tasks and advising. The current approach of a small group within ONEC working on developing policies and guidelines for decentralising teacher development may need to be expanded to include representatives from the provisional and regional MOE offices. It will also be advisable to include non-MOE organisational units such as the BMA and private schools. Using a widely representative group to work on this task also ensures there are people at all levels who can assist in the implementations. With the devolution of responsibility also comes accountability and rigorous reporting and accounting procedures need to be developed to ensure the success of the decentralised system. There is still a lot of work to be done regarding the structural and functional roles of the decentralised units.

- Besides the development of a decentralised model, there will also be a need to train all the staff involved in the new management model. This is particularly important for those who will provide management leadership during the transition to the new model. There needs to be clear understanding of the new roles and responsibilities and the training should emphasise the new mindset of facilitating and not controlling the work of teachers. It would be a pity if teachers were still assessed on performing routine steps and judged on their students' ability to recall and memorise instructional material and if the school principals were assessed on they ability to control their teachers rather than support them in their innovative teaching practices.

- Training will also be required for those stakeholders that need to understand and interpret the feedback from the assessment and monitoring procedures, both internal and external, as they will have to make recommendations for priority areas of teacher professional development in their respective regions or provinces.

- It will be necessary to develop teacher and school profiles for the respective regions in order to monitor the quality and distribution of teachers. The decentralised units will facilitate and manage the flow of information from the organisational units up and down the information path. Regular reporting procedures will also need to be established so that the MOE and any other organisational unit within both the central and decentralised elements of the Government structure can have easy access to teacher development information from around the country.

- Developing and implement decentralised management assumes an increased efficiency, up-to-date information and participation of people who are directly affected by the decisions and actions at the local level. However, this needs to be balanced against national priorities. Local priorities need to be carefully monitored to prevent regions regressing to educational activities that are not congruent with the National Framework and the Education Reform.

8.4 Teacher Licensing and Quality Assurance

- Considering that there are a number of different agencies that do teacher training there is a need to ensure the quality is maintained across the institutions. The Education Reform initiated the concept of teacher licensing. To give legitimacy to the teacher licensing, it will need to be established as part of legislation. This will need careful liaison with respective authorities within the Government of Thailand. Consideration should be given to how it will be managed throughout the country, particularly with regard to decentralisation.

- There is an urgent need to develop detailed guidelines as to what constitutes good professional practices in teaching, complete with procedures for judging them. This is a major task and requires considerable writing, critiquing and revising with the particular aspects of student-centred learning and new teaching and learning methods needing to be specially emphasised. The development of teacher competencies may assist the formulating of what constitutes good teaching for different grades and subjects.

- To provide credibility to the benefits of teacher licensing, clear and unambiguous procedures for application, probational periods and appeals procedures need to be developed and made publicly available to all interested people.

- There is a need to coordinate the work of the task force charged with the responsibility of developing the idea of teacher licensing further to maintain close consultation with the ONES, the MOE and the professional organisations of teachers. In addition, there is need establish communication channels and processes through which reports and meetings proceeding are shared. Teachers'

professional associations should be actively involved in the development of the new guidelines so that they can advise their members of the new requirements.

8.5 Teacher Incentive Schemes and Career Development

- The work done by the teacher incentive schemes needs major rethinking to include other reward and job satisfaction indicators. There is a need to consolidate the various previous schemes and integrate them into the incentive scheme that is acceptable to the Teacher Civil Service schemes. The current project based incentives that end at the completion of the respective project does not contribute towards the total career progression of the teachers.

- There has not been much work done in developing criteria for incentives. This is an important aspect if the incentives are to support the new student-centred learning. Clear criteria to support student-centred learning and those that focus on classroom teaching and school activities needs to be developed.

- Performance-based incentive schemes need to be considered which will support the shift from a supply driven model to one that focuses on demand. Teachers will be encouraged to take initiatives to upgrade their skills in areas of high demand and thus progress in their careers.

- Incentive schemes need to be linked with the decentralization of teacher development management and the ONES. Local stakeholders should have ownership in judging and making recommendation for incentives and promotions.

- Staff involved with teacher incentive schemes at the decentralized levels will need to be trained in their roles and responsibilities. They will need to understand the new guidelines that reflect the student-centred learning and new learning models if they are to judge innovative practices.

- Career development will be greatly assisted by active teacher professional associations that can provide an equal voice for teachers in the regional areas as well as urban area, in different subjects and sectors. Such associations should be encouraged to network with each other and also to consider affiliation with equivalent international associations.

8.6 Teachers' Knowledge and Skills Development

- There is still a considerable amount of work yet to be done in developing the necessary knowledge and skills of teachers to successfully implement the Education Reform. The majority of Thai teachers lack a good understanding of the concepts, principles and processes involved in the new approaches of teaching and learning. Furthermore, for sustainability, it is extremely important that training also focus on changing teacher beliefs about their practices. This means that intensive workshops with an on-line, school-based, mentoring support model of teacher development should be considered.

- The emerging knowledge types are also not fully understood by the majority of the teachers and educators in Thailand. It is the new knowledge types that forces teachers to consider active and student-centred learning methods. The knowledge types such as problems solving, critical thinking, reasoning etc. that underpin the new learning process need to be understood before the teacher can appreciate the learning strategies such as project work. There is a need to incorporate this in any teacher training workshops that is developed under the reform.

- Given that the teaching approaches associated with student-centred learning are new to majority of the teachers in Thailand, there is a need to develop local expertise in the form of Master Teachers that can then train other teachers. The narrow knowledge and skills of the master teachers was a limitation which should be resolved by providing them with comprehensive training in how to plan, deliver, monitor and evaluate student-centred learning lessons. Teachers' should be introduced to and encouraged to develop a repertoire of strategies such as debates, brain storming, project work, excursions, collaborative work, individual work, jig-saw, group work etc.

- Training of teachers should also include detailed classroom activities and templates of lessons. The Master Teachers should also model the teaching of new lessons so that teachers can observe it in action. Coupled with the need for observations is the need for teachers to understand classroom research and how it can enhance their practice.

- Given the large number of teachers already in the service, this should be a priority group. More intensive workshops with on-going support provided through technology-based delivery systems, professional associations and R&D teams is necessary until a critical mass of 10% of the teacher population is achieved. A critical mass of approximately 10% of the teachers is necessary before any model of national implementation can be considered. Future pilot studies could be designed to assist in achieving this 10% target.

- To maximise the impact of the Education Reform, innovative models of delivering training and supporting teachers need to be explored. The hybrid model of school-based training supplemented by intensive workshops and online support is a very attractive option. The Distance Education and Technology personnel should work closely with the Teachers' Knowledge and Skills Development personnel to design the best delivery model.

- Given the very long history of teacher-centred learning, there is a need for ongoing support and the progressive introduction of more complex and diversified concepts. Such long-term support should involve biannual intensive workshops, mentoring and distance learning. To reach out to majority of the classroom teachers in Thailand who have very different teaching situations will require a combination of the approaches listed above to have maximum impact. It may be worth exploring the possibility of working with the Open Universities since they have some resources and knowledge about supporting student learning from a distance

- To have a long term impact on improving the quality of teachers in Thailand, it is important to consider upgrading the staff of the teacher training institutes so that the preservice teacher training is brought in line with the new approaches to teaching and learning. With improved staffing, the teacher training institutes can play a major role in providing on-going support to classroom teachers.

- Teacher competencies in using student-centred learning also require a high level of content knowledge and an understanding of the multidimensional nature of knowledge. An appreciation of this allows teachers to see alternative ways to develop learning activities for a topic in a subject. This reinforces the previous concern that there is a need to reconceptualize the types of knowledge and skills teachers ought to facilitate in a knowledge-based society.
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8.7 Distance Learning and Technology

- To maximise the learning opportunities for inservice teachers, the existing distance education provisions present a very attractive option. The exiting infrastructure of satellite communication, learning centres, on-line communication, audio and video materials, and print-based material provide an excellent range of possibilities. However, the existing providers need support in terms of equipment and the upgrading of the human resource capability to develop high quality learning materials. There is a need to conduct a thorough appraisal of the capacities of local distance education providers and develop a matrix of their capacities and limitations.

- Significant staff development in both technical aspects of delivery and maintenance of equipment as well as in the design and development of new interactive instructional material will be required to support the training of classroom teachers in student-centred learning. This could be done through working in collaboration with Universities such as the Sukhothai Thammasathirat Open University and the NECTEC team.

- The development of online resources such as readings and learning support will have to be designed in such a way as to provide ongoing mentoring for teachers in the field. Considering accessibility the Rajabhats and Open Universities could play a major role in this regard.

- Associated with distance learning is the need for a good learning management system that tracks individual learners and provides the necessary guidance and feedback to both the learner and the instructor. Communication systems such as chat rooms and e-mail should form part of the learning management system.

8.8 Assessment

- Assessment is a core component of learning but there has been very little if any work done on how to design and implement methods of assessment that are congruent with the new models of teaching and learning. Teacher training and development should also include assessment activities such as peer evaluation,

self-assessment, portfolio assessment and maintaining reflective journals. Teachers should be shown templates of good practices and guided through the processes.

- For successful implementation of the new teaching and learning methods, school inspectors and school administrators should also be educated about the new approaches to assessment. Often the teachers out of fear of retribution by the school inspectors will revert to old practices. This needs to change. For instance the current grading of every piece of work that students generate is a huge workload for teachers. Monitoring work in progress without having to record a grade may be a better option for some project type work. Using students to assess their peers' work is another alternative. Also the use of assessment criteria for judging the quality of student work needs to be discussed and introduced as such methods allow useful feedback to be given to students.

8.9 Education Management Information System (EMIS)

- Considering the enormity of the total amount of data generated by the various teacher development units and a need to access this data at various levels, it may be wise to invest in a good EMIS system. Such a system can expedite many processes that currently experience considerable delay before a decision is reached. Further, it will assist in having a well-developed data based with teacher profiles etc that can be very useful for forecasting and planing

- The EMIS system could also serve the decentralised management of teacher development activities. The hiring, probation reports and follow-up action can all be easily accessed if they are on a central database

- Complementing the design, development and commissioning of an EMIS system is a need to train staff who would be inputting data or using the information from the database. This would include staff at the school, regional and national levels.

- To maximise the use of data from EMIS systems, it is important to identify those variables that not only will provide routine statistics but also will allow complex modelling to support policy development, training and planning for resource allocation. . As a new system, there is a need to conceptualise the purpose and process together with infrastructure implications.

8.10 Learning Resource Development

- Considering that the innovative ideas introduced through the education reform teachers will need assistance in developing teaching and learning resources to support the new student-centred learning process and the practices of teaching and management. Teachers are currently overworked and to expect them to spend their personal time in designing and developing teaching and learning material will be seen as an extra burden and lead to reluctance of the part of teachers. There is a need to identify a list of different types of resource that is considered as minimum requirements.

- There are a number of private and public sector organisations that are currently involved in developing generic learning resource material but they need to be evaluated for quality. Teacher professional organisations and the Curriculum and Instruction Department within the MOE should consider setting up a team with the necessary skills to test the new learning material and to advise teachers and parents. Outsourcing the development of some resources and promoting competition will pay dividends in enhancing education resources development. However, it is absolutely important to ensure that a rigorous and transparent quality control mechanism is in place.

- The MOE should also take the initiative to develop resource material for teacher training and for teachers to use in their classrooms. Given the subject-based expertise in the Curriculum and Instruction Department of the MOE, it would be useful for them to develop resources along the subject guidelines. In collaboration with the Distance Learning and Technology personnel and teacher professional organisations, internet- or satellite-driven databases should be developed to share examples of good practices such as lessons plans, resources, and the experiences of both teachers and students

- Considering that the new learning resources can range from technology-driven ones to print, there is a need to upgrade the capacity within the MOE, both in terms of equipment and human resources. In-country training workshops with some international exchange programs may be very useful for the local counterparts who will be involve in developing the learning resources because the local capacity is very limited.

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