

Scaling-up Educational Reform in Thailand:
Context, Collaboration, Networks and Change

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Abstract

Like other nations around the world, Thailand is engaged in a period of concerted educational reform and change. A national educational reform law passed in 1999 outlined new educational goals and structures for Thailand. While these changes parallel those found in many Western nations, they represent perhaps a more radical change given the educational traditions of Thailand.

Five years after passage of the national education act, there is a widespread perception among the Thai public that the impact of these reforms has not reached the school and classroom levels in significant ways. Parents, educators and system administrators are wondering what it will take to translate policymakers' intentions into actions that bring about observable changes in teaching and learning.

This paper presents a case study of how successful change in learning approach initiated in a single Thai school is spreading to a large number of other schools in Thailand. The change involved a curriculum program – Integrated Pest Management (IPM) that incorporates many of the learner-centered and community-focused features highlighted in Thailand's educational reform. While this curricular reform cannot yet be characterized as a *large-scale change*, the change process we describe illuminates features that we believe necessary for scaling-up a single innovation. These include a combination of bottom-up, outside-in, and top-down strategies.

Southeast Asia has witnessed a decade of transformational change such that children entering primary school today, “cannot even imagine the world in which their grandparents lived and into which their own parents were born” (Drucker, 1995, p. 75). Yet, even with the massive political and economic changes observed in Southeast Asia, fundamental cultural norms have proven more resistant to global forces. As Ohmae has observed: “The contents of kitchens and closets may change, but the core mechanisms by which cultures maintain their identity and socialize their young remain untouched” (1995, p. 30). This frames the challenge of educational reform in Asia and throughout the world where educational systems are struggling to keep pace with rapidly changing environmental demands (Fullan, 1993; Hallinger, 1998a, 1998b).

Nowhere is this observation more salient than Thailand. Thailand’s schools were never designed to produce the highly motivated, independent thinkers and learners demanded by an information-based economy (MOE, 1996; ONEC, 1997a, 1998a). Professor Kriengsak Charoenwongsak of Thailand’s Institute of Future Studies for Development has noted:

. . . increasing the quality of Thai products also involves improving the quality of education. The current emphasis on rote learning does not help students assume positions in the workplace which stresses problem-solving and other analytical skills.

(Bangkok Post, 1998, p. 2)

There is a national consensus that traditional Thai ways of managing schools and teaching children are unlikely to produce students who have the capacity to live productive and satisfying lives (Hallinger, 2000). Thai parents, school practitioners

and policymakers agree that one of the nation's greatest challenges is developing the capacity of school graduates to meet the demands of the information age.

This recognition led to passage of a comprehensive national educational reform law in 1999. This act outlined new educational goals for the nation that included literacy, numeracy, improved language capacity, and IT capabilities as well as an emphasis on the development of skills in thinking and independent, life-long learning. The same law initiated structural changes (e.g., decentralization of administration to local districts) as well as cultural changes (e.g., shift towards student-centered learning) in the educational system. While these changes parallel those found in many Western nations, their implementation is an even greater challenge given the educational traditions of Thailand.

Five years following passage of the educational reform act, observers would agree that reform in educational practice has lagged well behind political rhetoric. There is a widespread perception among the Thai public that the impact of these reforms has yet to reach into schools and classrooms in significant ways or on a substantial scale. Parents and educators are wondering what it will take to translate policymakers' intentions into observable changes in teaching and learning in classrooms and schools. Moreover, administrators and policymakers are seeking means by which they can both stimulate local change initiatives and transform isolated cases of successful innovation into systemic changes.

This paper presents a case study of successful curricular and instructional innovation in Thailand. The innovation involved a curricular program, Integrated Pest Management (IPM). This student-centered curriculum models many of the features highlighted in Thailand's educational reform such as the student-centered learning approach, curriculum integration, and involvement of the local community.

The IPM curriculum was initially developed in 1995 by a single teacher. During the past 10 years, it has since been scaled up for broader dissemination. While the innovative curriculum has not yet reached a national scale of implementation, the process by which this innovation grew organically through networks of teachers in combination with external and institutional support represents an useful case of educational reform.

Background

Thailand is a developing nation of 70 million citizens, 98% of whom are Buddhist. The country, known as one of Asia's "tiger economies," has experienced rapid growth over the past 20 years. When compared with neighboring countries – Malaysia, Singapore, Hong Kong, Taiwan – Thailand was slow off the mark with respect to educational reform (Hallinger et al., 2000). This changed following the economic crisis of 1997 when national policymakers began to link education and economic reform. Consequently, they began to place greater urgency on implementing many of the ideas that had been discussed over the prior decade. Following passage of the national education reform act in 1999, a key policymaker, Dr. Rung Kaewdang, Secretary General of the National Education Commission, claimed:

Learning by rote will next year be eliminated from all primary and secondary schools and be replaced with student-centered learning. . . Any teachers found failing to change their teaching style would be listed and provided with video-tapes showing new teaching techniques. If they still failed to

improve, they would be sent for intensive training. (Bunnag, 2000, p. 5)

Four years after the publication of the above statement, it is safe to say that a relatively small percentage of Thailand's 400,000 plus teachers have made the shift towards learner-centered teaching. Thailand's educational system is of substantial size and is run by a highly centralized Ministry of Education centered in Bangkok, the capital city. The nation has 78 provinces. Under the new educational reform act, the country has been organized into 175 education districts, each of which is managed by an officer comparable in authority to an American school superintendent. The government education system, which serves the vast majority of Thai 8.5 million students, consists of 30,000 primary schools and 2,700 secondary schools.

In an educational system of this size, it is no surprise that the pace of wide-scale change has not fulfilled the expectations and aspirations of policymakers. The reality *in schools throughout the world* is that change in teachers' classroom practices is slow (Fullan, 1993). Even officials in Thailand's Ministry of Education would agree that the results of past system-wide change efforts have been largely disappointing.

The Thai public's perception is that implementation of the current education reforms is even slower than usual. From our perception, the slow pace is not surprising given the national scope of implementation and the broad nature of mandated changes that reach into all aspects of schooling. There is, however, no question of a gap between the public's perception of urgency and the capacity of the national education system to respond.

Several "local factors" have complicated the current attempts at systemic education reform in Thailand. First, Thai teachers perceive the current reforms as

“foreign” in origin and in nature. Discussions about educational reform in Thailand often assume that people are speaking the same “language.” Many English terms such as *student-centered learning* or *school-based management* have indeed been imported from abroad and have no equivalents in the Thai language. When these terms are translated, educators are often unsure of the true intentions behind the words or phrases. This leads to a proliferation of interpretations and confusion.

In addition to this linguistic confusion, there is also a degree of cultural mismatch when these global reforms reach the shores of Thailand. In traditional Thai culture there is a strong inherent belief that knowledge is associated with age, position and status. Based on Buddhist teachings, Thais believe that they were born into their own status based on *karma* from previous lives.

Formal status differentiation traces back as far as the fifteenth century when Thailand employed the *sakdina* system. This system ranked every citizen by assigning a number or “dignity mark.” The points ranged from 100,000 to 5 based on one’s social status (Holmes & Tangtongtavy, 1995; Rabibhadana, 1975). Although the *sakdina* system was abolished four hundred years later, two beliefs persist to the present. First, every Thai understands that he/she has a particular place in the cultural hierarchy. Second, Thai’s generally accept that they should be content with that place (Holmes & Tangtongtavy, 1995).

This deeply-held cultural norm is an obstacle to viewing other students or adults who are lacking in formal education as legitimate sources of knowledge. A strong tradition of teacher-directed, rote learning is consistent with this cultural value and rigidifies roles and responsibilities in Thai classrooms. Thus, the rhetoric of policymakers to the contrary, the learner-centered approach embedded in Thailand’s educational reform have not been widely accepted by teachers, students or parents.

By way of example, in a well-publicized incident, a primary school student reflected on her experiences with student-centered learning at her school. Following its use in her classroom, she referred to this method in the most insulting terms available to a Thai. She complained that it was like “buffalo learning” -- a form of learning from ignorance. This incident highlighted the disarray that characterizes the use of student-centered learning in Thailand. Teachers – and students -- are often uncomfortable with the underlying philosophy and uncertain of the appropriate practices to make it succeed.

Cultural mismatch between global reforms and local norms also rears its head with respect to the actual process of educational reform. System leaders at the Ministry of Education have traditionally made all of the major educational decisions in Thailand. The philosophy reflected in the earlier quotation from Dr. Rung Kaewdang is consistent with Thailand’s tradition of implementation by top-down mandate (Hallinger & Kantamara, 2000a, 2000b). Due to resource allocation constraints or priorities, the Ministry of Education provides little if any training to teachers prior to implementation of new methods. Once the new project is launched, supervisors armed with implementation checklists make “hit and run” visits to schools looking for information to confirm the belief that change has taken place (Hallinger et al., 2000).

Moreover, the people who implement system decisions – principals and teachers -- have never been viewed as equal partners in the change process, much less initiators of change. There has never been an emphasis on “developing a shared vision” of change but simply on communicating decisions and orders. We believe that educators in Thai schools still lack a clear vision of the centerpiece of the current reform agenda: the *learner-centered classroom*.

The ineffective process of top-down change implementation that has characterized Thailand would read as familiar story in many other countries. Despite an elaborate institutional system, the Ministry of Education's attempts to translate its goals and intentions into meaningful actions by principals and teachers in the provinces are characterized by slippage, misinterpretation, and ineffectiveness. Although passage of the national educational reform act has provided the nation with a new vision of 21st century education, the problem of how to transform the vision into reality remains one of the country's most widely recognized, if unmet, challenges.

The IPM Curriculum:

An Example of 21st Century Education Reform in Thailand

Integrated Pest Management (IPM) is an agro-ecosystem method by which farmers control the balance of pests and natural enemies in their fields while limiting the use of expensive and potentially harmful chemicals. The IPM curriculum¹ for rural schools was initiated for the first time in Thailand in 1994. In 1995, the IPM curriculum was first piloted with grade 6th students at the Wat Nong Moo school in Nakornsawan province by their teacher, Manas Burapa.

Manas had been living in a neighborhood where excessive use of poisonous pesticides was a common practice among the rural rice farmers. He was aware of the potential dangers associated with use of these chemicals and also the local farmers' ignorance of alternative farming practices. He wished for his students to learn about

¹ Recently IPM is referred to as REAL Education, which stands for Rural Ecology and Agricultural Livelihoods as described by Bartlett, A.& Jatiket, M. (2003, September) *Getting REAL in Thai schools, Pesticides News No 61, The Journal of Pesticide Action Network UK.*

the ecology of rice fields, the impact that excessive use of chemicals could have on the environment, as well as alternatives farming practices.

On his own initiative, Manas sought advice about alternative farming methods from the *Agriculture Extension Department* and *Thai Education Foundation* (TEF), a non-governmental organization. This collaboration led Manas and Banharn Chantokomuth, a trainer from the TEF, to seek out a suitable curriculum focusing on pest management. They identified an Integrated Pest Management (IPM) training program that had been implemented by *Farmer Field Schools* (FFS) in Indonesia under the auspices of the *United Nations Food and Agricultural Organization* (FAO). In the IPM curriculum, the farmers used field observations as the basis for learning how to make decisions about crop planning, preparation, production and protection practices.

Manas and Banharn concluded that although the FFS curriculum was successful in teaching *adult* farmers, numerous modifications would be necessary given the different group of learners in an upper-primary grade curriculum. Thus, Manas and Banharn modified the FFS curriculum in order to take account of the different learning objectives and constraints that would be faced in a primary school.

In the resulting IPM curriculum, primary age students use field observations as a starting point for learning about a wide range of environmental issues. They learn actual agro-ecosystem practices that can be implemented on their family farms. No less important in the eyes of the designers, the curriculum also explicitly addresses the children's underlying beliefs and values about health, safety, and the environment.

IPM Curriculum Content and Learning Process

The primary grade IPM curriculum provides an, “integrated learning process in which school children explore what is happening in local farms and thereby gain an

understanding of ecology and develop critical thinking skills with respect to environmental, health and social problems” (Bartlett & Jatiket, 2004, p.2). By gaining a perspective on farms as eco-systems, students learn ways to solve field problems ecologically.

The curriculum involves parents and community members as knowledge resources for the students. They provide information on plant morphology, the planting calendar, and local pests. They assist on chemicals surveys and summarize inputs and profits. Community members become legitimate sources of indigenous knowledge that complements the formal scientific knowledge gained from classroom resources.

Learning activities conducted by the students include field surveys, extermination of insects, creation of insect zoos, data collection and analysis, problem-solving, and decision-making. These occur in conjunction with the actual process of farming which takes place throughout the planting season. In the IPM curriculum, the learning process and context as well as the roles of students and teachers contrast sharply with the passive learning that characterizes the traditional Thai classroom.

The IPM program involves weekly sessions held in the field and the classroom. First, students go into the field to discover through direct experience every step of how to grow crops, either rice or vegetables. During the season they are introduced to the stages of the planting cycle: Pre-planting Stage, Seedling Stage, Vegetative Stage, Productive Stage, Harvesting Stage, Post-harvesting Stage. While in the field, they make detailed observations of the agro-ecosystem. This involves identifying the names of insects, counting their numbers and determining their

location, observing whether they are pests or natural enemies, measuring the level of water, and measuring the height of the plants.

Back in the classroom, the students document their fieldwork, analyze and discuss the data they collected from observation. These sessions, in the field and the classroom, are carried out by students working in small groups. Every student becomes actively involved in practical and analytical work (Bartlett & Jatiket, 2004).

By exploring the actual farming process that takes place in a rice field, students are introduced to a wide range of environmental concepts and issues. These include food chains and life cycles, water pollution and soil erosion, and biodiversity. By learning through this active approach, topics are transformed from a list of abstract concepts into a web of tangible processes that matter to the students and their families. Students become part of that web every time they enter a rice field, and they learn how their own actions make a difference to other parts of the web.

Through the curricular activities, students familiarize themselves with the process of discovery. They engage in collective learning in a natural classroom. They learn to think and work systematically through the scientific method. They learn to set hypotheses and then use tools for systematic data collection, analysis, and interpretation of results. These learning processes sharpen students' capacities for observation, problem-solving, and finally decision making.

In addition to environmental education, IPM activities can – and often are – integrated into other parts of the school curriculum. The information and materials that students collect in the field are used as a basis for science projects, math exercises, art activities, and essay writing assignments. Students are encouraged to keep portfolios of the work they produce and exhibitions are organized at which they share their work with the community.

The role of IPM teachers is also different from other teachers in other schools. Instead of delivering information, they facilitate the learning process, arrange resources, demonstrate study techniques, set problems, ask questions and provide encouragement. IPM teachers often have to learn the content of IPM together with the students since they may not know about agro-ecosystems themselves.

Initial Implementation of the Curriculum Innovation at One School

With support from the TEF, Manas initially implemented the new IPM curriculum at his own school over a three-year period. The results were considered very successful. Evaluations of the IPM curriculum found that this learner-centered approach had multiple advantages over traditional methods in use.

First, the IPM curriculum connected the learning content and process to the lives of the students. Observations suggested that this increased student motivation and engagement. Second the approach placed responsibility for learning on the students leading. This led to increased effort. Third, students began to use the problem-solving, learning, and decision-making tools across disciplines. This had the unanticipated effect of increasing student interest in subjects outside the formal IPM curriculum. Finally, in a country where rural schools often lack learning formal resources, this approach transformed the mountains, forests, and rice fields into readily available, renewable learning resources.

Scaling Up for Change

Scaling up for change refers to the process by which an innovation implemented in a single classroom or school can be implemented on a broader scale. As noted earlier, Thailand's administrative structure has traditionally emphasized a highly directive, top-down approach towards policy implementation. In recent years,

recognition that this approach was inhibiting innovation led policymakers to take steps towards decentralization of decision-making.

Nonetheless, rhetoric to the contrary, decades of institutional tradition as well as cultural deference towards authority continue to make local initiatives on behalf of students the exception rather than the rule. Thus, the process by which local reforms can scale up within this emerging decentralized educational system is an issue of broad interest among practitioners and policymakers in Thailand.

Scaling up Implementation of the IPM Curriculum

The process by which the IPM program in schools expanded evolved organically over the years. The TEF's strategies for encouraging use of the IPM program in schools included developing pilot projects at the school level and bridging the project to the institutional level (i.e., Ministry of Education) for support and expansion of the program.

Numerous issues arose as potential obstacles to implementation of the IPM curriculum in other schools. These included alignment of the curriculum content with the nationally mandated curriculum, fitting these units into the teaching calendar, developing teacher capacities to assess learning outcomes, and sustaining the program in a rapidly changing educational context. The scaling-up process of IPM implementation included recruitment of schools, development of teacher capacities, follow-up support, development of school support systems, community involvement, evaluation and planning and the annual forum for exchange and dissemination.

Recruitment of teachers and schools. News of the success of the IPM curriculum at Wat Nong Moo School was initially disseminated by the TEF through informal networks of teachers involved in its other projects in Thailand. Through these and other contacts, TEF staff met with provincial and district office

administrators in selected provinces in order to recruit more schools into the IPM project. TEF staff provided information about the program and solicited the names of principals and teachers whom provincial administrators believed might be interested in this type of innovative curriculum and teaching approach. The TEF staff then visited and interviewed interested principals and teachers in the schools.

As time passed and more schools joined the project, an “eco-schools network” was established. Committees were established in several provinces. The committees are comprised of teachers and principals who are involved in implementation of the IPM curriculum as well as provincial education administrators. These committees assumed responsibility for the managing the eco-schools network and organized the recruitment of new schools. The criteria for accepting new schools include:

1. The prospective teacher(s) and principal should have a strong interest in the curriculum as well as in the instructional approach.
2. The prospective teacher(s) will be allowed to attend relevant training courses in the short-term as well as the long-term.
3. The principal commits to attending a specific portion of the training course in order to foster understanding of the curriculum goals, curriculum content, the instructional process, and his/her role in supporting implementation by the teacher(s).
4. The school has access to rice fields and/or vegetables gardens.
5. The school committee has endorsed the school’s participation in the program.

The recruitment process usually takes several months. The number of new schools entering the program at any given time depends on the availability of funds from both institutional and external sources.

Teacher development: Various approaches to developing the capacity of teachers have been tried out over the years. In the initial program implementation model, teachers attended a two-week pre-service training course. They continued to meet once every two weeks for two days to reflect on the work and receive additional training throughout the season. The current design includes the season-long training but the period has been shortened from 15 weeks to 7 weeks in order to fit the school break calendar. Teachers were trained on the rice curriculum for the first season and the vegetable curriculum for the second season.

This approach was implemented in two provinces. The model was successful in that it provided an on-going process for trainees to meet, reflect and built unity among participating schools. However, the design required a period of at least one year (i.e., two seasons) for teachers to fully develop their ability to use the curriculum. In addition, the design created fragmentation of training topics, especially on the studies that normally conducted during the season-long training. To address these issues and to avoid teachers' absence from school, TEF designed an eight-week course for training teachers to fit the school break calendar.

Over time the program implementers organized refresher training sessions at the request of the teachers. The goals of the refresher training are to identify problems and obstacles for implementation and to provide advanced training to teachers. These are now coordinated by the network committees and are usually scheduled two or three times during the implementation of the IPM curriculum by participating schools. The refresher training sessions are now integrated as part of the program.

Principal development. During the initial years of implementation, teachers often complained of inadequate support within their schools. They expressed frustration over a lack of understanding of the program goals by the principal and

peers. Some principals dealt with changes unsystematically and created an unproductive working atmosphere for these teachers who were trying to fulfill a new vision of education.

Only during the past three years did the eco-schools network begin to require the principal of the IPM Schools to attend a portion of the pre-service training along with the teachers. In addition, TEF provided supplemental training to principals in the areas of leadership, change management, conflict resolution, observation and feedback and participatory planning process. This training has increased principal support of the program goals, enabled principals to understand technical aspects of the program, and offered ideas on how they can support implementation.

Follow-up visits. After the training, teachers received periodic follow-up visits from TEF staff and in some cases from teacher supervisors. The follow-up visits were designed to provide feedback to teachers and to trouble-shoot problems that had occurred during implementation of the IPM curriculum.

The follow-up visits were usually planned with selected schools depending on expressed needs. The visits usually occurred at least once or twice a season for a school. These visits, as well as the Refresher Training, help create a closer relationship between TEF support staff and the school teachers. The TEF staff were also able to provide on-going support to those who were facing difficulties implementing the unfamiliar curriculum. This kind of in-class observation and on-going support is seldom provided by official supervisors. When it does occur it tends to be formalistic and geared towards evaluation rather than development and problem-solving.

With the aim of institutionalizing the follow-up visits and develop local capacity for supporting the program, TEF began to include teacher supervisors in the

Training of Teachers courses. Unfortunately, the teacher supervisors were unable to accommodate all of the visits needed by the program due to other work requirements. Moreover, in light of recent changes in Thailand's educational system there has been frequent relocation of supervisory staff in the provinces. This has reduced the effectiveness of this capacity development strategy. Thus, the TEF has remained involved in providing follow-up support.

Developing support systems in the schools. The IPM curriculum is an integrated curriculum where students not only learn the IPM content, but also practice language, art, math, English and life skills embedded in the curriculum. In order for the school to effectively implement the IPM curriculum, collaboration among teachers of other subjects was essential. During the first years of the project, the motivation among teachers of other subjects was fairly low. There were no formal expectations in Thailand's educational system that teachers should either develop professionally or collaborate with other teachers.

The educational reform act of 1999, however, required all teachers to develop their skills and knowledge in areas of curriculum development, student-centered learning approaches, and student assessment. With these new expectations, teachers outside the IPM curriculum began to work more closely with the IPM teachers. In addition, principals began to become more interested in "Whole School Approaches" that involve all concerned parties in the development of the school.

The IPM curriculum became an "action vehicle" around which schools could begin to fulfill the vision of education encompassed in the education reform law. Schools started to establish support systems and structures by which teachers could work together. These support systems included weekly meetings devoted solely for curriculum integration, common lesson planning, and peer coaching.

Community involvement. Parents and community members can participate in the IPM program in a variety of ways. For example, they were invited to talk with school students about what their community, forests, mountains, rivers were like in the past? How things have changed? What caused the change? Some were invited to demonstrate how to make old-fashioned rat traps to the children. They were also invited to go into the rice paddies and learn about insects with the students.

Often the parents admitted their children knew more about ‘pests’ and ‘natural enemies’ than they did themselves. At the end of the term, there was an exhibition where students present their different products, such as big books, reports, essay, experimental results; they also role played and performed. This kind of involvement from the parents and community has helped them better understand the true concept of IPM and give support to the schools.

Evaluation and planning. Evaluation and planning workshops were usually scheduled at the end of the school semester and/or fiscal year. The frequency of the workshops varies from one province to another. The goals of the workshop were to review progress and set the forward implementation plan.

Forum for exchanges and dissemination. The School IPM Forum was organized annually for participating schools to exhibit their development, exchange innovations and disseminate their works. Students’ field days or exhibitions were usually scheduled during the workshop to enable participants to see the students’ exhibition. Participants in these workshops included policymakers, provincial education administrators, school representatives and interested agencies from both domestic and abroad.

Funding. The surprising success of the IPM program at the Wat Nong Moo School led to considerable publicity. Teachers from other schools in the neighborhood

and distant provinces, Ministry officials, politicians, teacher supervisors, parents, and interested community members visited the school in order to see educational reform in action. All parties agreed on the value of expanding implementation of IPM program to other schools as quickly as feasible. However, dissemination would require a level of institutional support that had never been provided to the IPM developers during the early years.

Thus, despite the enthusiastic response, there was an inevitable time-lag in implementation due to the need to write the program into the annual budget cycle. Initially, supportive officials at the Ministry of Education were only find funds in the current budget to sponsor expansion to one additional province. In subsequent years, the mainstream department, the Office of the National Primary Education Commission (ONPEC), at the national and provincial levels, contributed funds to supplement financial support TEF solicited from the FAO. However, the contributions have yet to be committed as long-term support due to frequent changes of senior leaders at the policy level.

The program then got caught in a paradoxical situation. The key decision-maker on budget allocation at the Ministry of Education wanted to expand the program immediately to every school in Thailand. This was impossible given the human resources available. Unfortunately, this limitation then led decision-makers to withdraw broader financial support which again left the implementers searching for funds. At this point, expansion of the IPM program continues to lack reliable central funding and must be cobbled together from a variety of sources. As a result, TEF was prompted to change the strategy towards building capacity of the Eco-Schools Network to develop proposals, solicit funding and manage their programs.

The Eco-Schools Network. Starting from one school, the IPM curriculum has been refined for use in over 50 primary and early secondary schools in four provinces (out of 78 provinces) across Thailand. The curriculum is not only being used in its “pure form” but has also been adapted for use with other curriculum content (e.g., health impact assessment, waste management, river conservation). After nine years of successful implementation, the Eco-Schools network was established through the support from TEF. The goals of the network are to continue the development of the IPM schools in the province and to solicit funding to support their plans and management.

Currently the Eco-Schools Network is overseen by an appointed committee. The committee is comprised of teachers, principals, district and provincial officers. The role of the committee is to plan for the development of the IPM program, solicit funds, manage, evaluate and disseminate their programs. Members of the Eco-School network include all IPM schools. At each school, there is a representative who coordinates between member schools when organizing any activities of the network.

The IPM schools that belong to the network at the provincial level meet periodically to exchange experience plan activities and/or training. At the cross-provincial level, the network participated at the *National IPM Forum* every year at which TEF invites all stakeholders from the other two provinces in the network and other interested. At the Forum, there are many activities such as the exhibitions of student products/projects, presentations, small group or panel discussions on IPM or IPM-related topics and recommendations for program development and policy.

Success Factors in Scaling Up for Change

Today, the IPM program is recognized as one of the clearest examples of successful reform of the learning process that has emerged to date in Thailand. It stands out as a model of an integrated, student-centered curriculum and as a method of developing local curriculum that is responsive to community problems. This change effort originated outside of the institutional structure of the Ministry of Education. As such it is an example of how bottom-up change initiatives succeed even within a highly bureaucratic system. In this section, we discuss the combination or interaction of bottom-up, outside-in, and top-down strategies that have supported successful implementation of the IPM curriculum to date.

Change from the Bottom-Up

This story of educational reform began with the inspiration of a single teacher motivated to help the children in his classroom and the people in his community. This motivation and the persistence evident in his effort cannot be easily instilled through policy mandates. As Milbrey McLaughlin (1981) has observed you cannot mandate what matters to people.

This teacher's "infectious enthusiasm" was carried over to other teachers during the dissemination phase. The Ministry of Education's vision of student-centered education had come to life in Manas' IPM curriculum. Moreover, other teachers viewed it a model that was within their potential to implement and that appeared to be culturally relevant to their students and communities.

Bottom-up change was also evident in the leadership of school principals. Their support was critical in enabling the spread of the curriculum beyond the initial school. In virtually every one of the schools that joined the Eco-School Network, the principals provided assistance or at least approval for the teachers to join associated activities and bring the curriculum to their schools. As in other nations, the presence

or absence of principal support was an important condition affecting the success of the change (Caldwell, 1998; Fullan, 1991; Hall & Hord, 1987; Hallinger & Kantamara, 2000a, 2000b).

In Thailand, principals hold a higher degree of power within the school both culturally and institutionally than in many Western nations. Without the principal's support, curricular or instructional change is unlikely to happen. Moreover, as suggested above, the IPM curriculum requires changes in the teaching schedule, students' and teachers' behaviors, location of learning, the role and personage of the teachers. Many of these changes could not be made with support from the principal.

Notably, there were a few instances of successful implementation where the principal's support was more passive. In these cases, successful implementation of the IPM program was possible if the school had a group of innovative teachers interested in instructional reform.

For example, in the early stages of dissemination, there was a group of teachers who attended the *Training of Trainers* workshop on IPM curriculum organized by the TEF. When they returned to their schools, they tried out the curriculum and provided support to each other. Once the IPM curriculum was adopted by their schools as the school local curriculum, they volunteered to train their peers. However, this type of successful implementation without support from the principal tended to be the exception rather than the rule.

Change from the Outside-In

Interviews with participating teachers and principals suggested that “outside-in” support was critical at several stages in the IPM program's development and dissemination. First, the TEF played an important role in working with the teacher, Mr. Manas, to identify and adapt the first prototype of the IPM curriculum for primary

schools. Subsequently, TEF staff provided technical and moral support during the implementation of the IPM curriculum at his school. While the technical support was important, the Foundation's involvement also provided legitimacy to his efforts to depart from tradition at his rural school.

Support from the TEF was also critical during the dissemination stage. TEF staff spread word of Manas' success to teachers in other parts of Thailand, and again lent legitimacy to the effort with Ministry of Education officials. As interest in the curriculum grew, the TEF sponsored Training of Trainer and Refresher Training courses and provided crucial follow-up monitoring and support. These activities stimulated the interest and readiness of teachers beyond the province in which Manas taught as well as providing necessary skill and implementation support.

The TEF was also instrumental in formulating and supporting a variety of activities that helped lay the groundwork for longer-term sustainability of the IPM curriculum. These included helping to found and support the *National IPM Forum* and the *Eco-Schools Network*, sponsorship of proposal writing workshops for teachers, evaluation of program implementation, and publication of data on the program's success. Thus, outside-in support could be viewed as providing some key ingredients needed to nurture and grow the idea that sprouted from a single teacher.

Support for Change from the Top-Down and Across Levels

While the previously sections focused on bottom-up and outside-in change factors, dissemination of the change at one school could not have spread as far without support from the educational hierarchy. With the aim of institutionalizing the project, it was necessary to build political support and institutional capacity at the central, provincial, district, and school levels.

At the central level of the Ministry of Education, it was necessary to obtain visible public support from senior administrators. After these leaders (e.g., Director General of the General Education Division) publicly acknowledged that the program was both needed and a suitable response to national policy, building support among mid-level and local educational leaders became significantly easier.

In addition, support at the top was necessary in order to gain access to the national funding. This was needed for training and other activities critical for institutionalization of the innovation. At this point these funds are provided by the Ministry of Education, either from the national office, the provincial office or both, and from external agencies such as the National Education Commission, National Science Research funds, UNDP and Danida.

The program continues to grow and has now expanded to 35 Agricultural Colleges. It is also being offered as vocational courses for farmers under the Department of the Non-Formal Education in over 40 provinces. It also infecting practitioners in countries such as Bangladesh, Cambodia, Philippines and Vietnam who are seeking models for learner-centered schooling that are relevant their local contexts. The IPM program represents a useful action vehicle for achieving this goal.

Conclusions

The IPM curriculum was implemented using a ‘Think Big, Start Small’ philosophy. It started from the inspiration of a single teacher working with a small non-governmental organization, the Thailand Education Foundation. The impact of this small program now can be seen at numerous schools in many parts of Thailand. The IPM program provides demonstrates that “global” education reforms such as

student-centered, integrated curriculum and community-based education can work in Thailand.

The IPM curriculum is, however, a radical change from the norm in Thai schools. It is no exaggeration to refer to IPM as a paradigm shift in learning method. The IPM program requires a significant change in the individual mindsets of teachers, principals, community members and system leaders. As described in this paper, it also requires the development of new knowledge and skills among school personnel who undertake this program. Nonetheless, the presence of success stories throughout the country is itself a support factor. The schools in which the IPM curriculum is being used provide observable models of success.

No less important, however, are the lessons drawn about the process of systemic educational reform. The IPM program was initiated from the bottom-up by a single teacher rather than by administrators in the Ministry of Education. The sense of ownership, commitment, and motivation to carry out the program demonstrated by a single teacher seemed to “infect” the other teachers who implemented the IPM program subsequently. This type of commitment, creativity and persistence is often lacking in programs sponsored from the center of the educational system.

Despite the bottom-up initiation of this program, it must be emphasized that “outside-in” support was needed to nurture the programs development from its earliest stages. Outside-in support from the TEF provided technical assistance during the process of identifying and adapting the curriculum. Both moral support in the form of encouragement and technical support in the form of training and follow-up support have continued during the subsequent stages as the program began to spread to other schools.

Top-down support has also been essential in fostering the expansion of the IPM program beyond just a few schools. Indeed, in an education system with 400,000 teachers, it is hardly accurate to characterize the success of the IPM curriculum as a “large-scale change.” Instead we would refer to this as *scaling-up to large-scale change*. Indeed, this case study highlights the critical nature of top-down support in order to disseminate broader success of locally-generated innovations.

In this case, the capacity for expanding the IPM curriculum received a major boost after passage of the national education reform act in 1999. This law changed the legal context of education in Thailand. It legitimated many of the “radical” features of the IPM curriculum such as its student-centered learning approach, community involvement, curriculum integration, and respect for indigenous knowledge.

The law also encouraged and legitimated support features without which the program could neither thrive nor spread. These include expectations for teachers and principals to engage actively in professional development, to participate in management of the school, and to collaborate in development of the school’s learning program. Similarly, we noted a variety of structural changes at the provincial and school levels in scheduling, planning and funding associated with the education reform act that supported program implementation. There is little question that these features would have been more difficult to put into place prior to passage of the education reform legislation in 1999.

Top-down support has also come in the form of funding from the Ministry of Education. Indeed, broader institutional adoption of the IPM curriculum will require more concerted financial and management support from the Ministry.

This case study of educational change in Thailand provides insight into how systemic change forces interact with local change forces to produce positive change.

The reader might conclude that this case study has simply identified important features of successful educational change previously noted by scholars internationally over the past several decades (e.g., Caldwell, 1998; Cheng, 1995; Fullan, 1993; Hall & Hord, 1987; McLaughlin, 1990). While this is true, we believe that the case study also highlights interesting “local” Thai flavors that infused the process of systemic change within a broader context of global change forces.

This was vividly apparent in the interaction between global education policies practices such as student-centered learning and local cultural norms and traditions. There is little question in our minds that this feature would be shared in many other Asian nations that share this cultural similarity. Thus, the case study both reinforces and deepens our understanding of educational change as a process of sense-making (Evans, 1996; Fullan, 1991, 1993).

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