

SCALING-UP EDUCATIONAL REFORM IN THAILAND: CONTEXT, COLLABORATION, NETWORKS, AND CHANGE

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 (1995) 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” (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 in 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, 1997b). 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” (“Higher-value,” 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 the passage of a comprehensive national educational reform law in 1999. The major components of this act include: a) ensuring basic education for all children, b) reforming the education system, c) reforming the learning process, d) reorganizing the administrative system, e) introducing a system of educational quality assurance, f) enhancing professionalism and the quality of the teaching profession, g) mobilizing resources and investment for education, and h) adopting information and communication technology (ICT) for educational reform.

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 critical thinking and independent, lifelong learning. The same law initiated structural changes (e.g., decentralization of administration to local districts) as well as cultural changes (e.g., shift toward 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 the passage of the educational reform act,

observers 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 schools and classrooms in significant ways or on a substantial scale (Fredrickson, 2003, 2005; Fry, 2002). 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 article 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 a 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, Chantarapanya, Sriboonma, & Kantamara, 2000). This changed after 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 previous decade. Following the 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 toward learner-centered teaching. Thailand's educational system is of substantial size and is managed by a highly centralized Ministry of Education (MoE) centered in Bangkok, the capital city. The nation has 76 provinces. Under the new educational reform act, the country was 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 the 8.5 million Thai 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; Fredrickson, 2003). 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 out to 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." Policymakers have imported English terms such as student-centered learning or school-based management that have no equivalents in the Thai language. When these terms are translated into Thai, 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, Thais generally accept that they should be content with their 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 has 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, *kwai*-centered. 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 MoE 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 a 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 the passage of the national educational reform act has provided the nation with a new vision of twenty-first century education, the problem of how to transform the vision into reality remains one of the country’s most widely recognized, if unmet, challenges.

Methodology

The methodology of this case study was qualitative, entailing document analysis, interviews, and field observations. Secondary data derived from reviewing technical, progress, and summary reports produced by the Thai Education Foundation (TEF) for the fund providers of the program. The reports provided both general information on the conception of the IPM school program as well as the specifics of the program, such as success factors and obstacles, and the impact of the program upon the students, teachers, and other parties involved within the participating schools and communities.

The primary data were collected through individual interviews with various people (i.e., teachers who used IPM curriculum, TEF trainers, and MoE staff who were closely involved with the program activities). These people provided useful information from different perspectives to explain factors that appeared to contribute to the success of the IPM program. In addition, the primary author made several additional visits to the IPM sites to observe the activities and obtain the reactions of the learners in order to gain insights into the impact of the program.

The IPM Curriculum

An Example of Twenty-First 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 curriculum for rural schools was initiated for the first time in Thailand in 1994. In 1995, the IPM curriculum was first piloted with grade five students at the Wat Nong Moo School in Nakorn Sawan Province by their teacher, Mr. 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 wanted his students to learn about the ecology of rice fields, the impact that excessive use of chemicals could have on the environment, as well as alternative 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 whose overall mission is to improve the quality of education and environmental preservation in Thailand. This collaboration led Manas and Banharn Chantokomuth, a trainer from 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 Agriculture 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 into account 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 they can

implement on their family farms. No less important in the eyes of the designers is the fact that 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. 9). 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 chemical 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, and 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 and analyze and discuss the observation data they collected. Students carry out all of these tasks in the field as well as the classroom by 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 learn about a wide range of environmental concepts and issues. These include food chains and life cycles, water pollution and soil erosion, and biodiversity. This active approach to learning transforms the topics 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 decision making.

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

The role of IPM teachers is also different from that of 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 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. 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 formal learning 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 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., MoE) for support and expansion of the program. Traditionally, many possibly beneficial programs ended up having a short life since the NGOs (non-governmental organizations) that operated them were trying to do it alone. There often seemed to be an impermeable barrier between NGOs and government agencies that prevented them from collaborating fully.

TEF took a different approach by involving government officials whenever possible in program activities such as participating in the planning session, attending the Training of Trainers, and visiting the IPM sites. The program was able to tap financial and human resources readily available at governmental agencies (e.g., agricultural extension, non-formal education department, and provincial education office). Though it was not an easy task, it was possible. The increased involvement of government officials in the IPM program helped make the program sustainable. After all, it is not the role of an NGO to assist the program forever.

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. Nevertheless, these issues were surmounted through a step-by-step process of learning by doing.

Organic Steps in the Scaling-Up Process

The scaling-up process of IPM implementation included recruitment of schools, development of teacher and principal capacities (prior and during the program implementation), follow-up support, development of school support systems, community involvement, evaluation and planning, funding, and the annual forum and school network 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 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 who provincial administrators believed might be interested in this type of innovative curriculum and teaching approach. TEF staff then visited and interviewed those principals and teachers in the schools to assess their interest and commitment.

As time passed and more schools joined the project, an “eco-schools network” was established. The network established committees in several provinces. The committees are composed of teachers and principals who are involved in implementating the IPM curriculum as well as provincial education administrators. These committees assumed responsibility for 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 vegetable 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. Project staff have experimented with various approaches to developing the capacity of teachers 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 of a shorter duration 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 ongoing process for trainees to meet, reflect, and build 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 were 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 that 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. Network committees now coordinate this training, which runs two or three times during the implementation of the IPM curriculum. 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 the 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 principals' support of the program goals, enabled them 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 the teacher supervisors. The follow-up visits were designed to provide feedback to teachers and to troubleshoot 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 was also able to provide ongoing support to those who found it difficult to implement the unfamiliar curriculum. This kind of in-class observation and ongoing support is seldom provided by official supervisors. When it does occur, it tends to be formalistic and geared toward evaluation rather than development and problem solving.

With the aim of institutionalizing the follow-up visits and developing local capacity to support 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, 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 to 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, and rivers were like in the past. How have things 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 with the students and learn about insects.

Often the parents admitted that 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 presented their different products, such as big books, reports, essays, and experimental results; they also role played and performed. This kind of involvement from the parents and community has helped them to 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 workshops varies across provinces. The goals of these workshops were to review progress and to move the implementation plan forward.

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 forum to enable participants to see the students' exhibitions. Participants in these annual forums included policymakers, provincial education administrators, school representatives, and interested agencies from both home 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 the educational reform in action. All parties agreed on the value of expanding the implementation of the 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 MoE officials could 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 the 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 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 toward building the 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 76 provinces) across Thailand. The curriculum is not only being used in its “pure form” but it has also been adapted for use with other curriculum content (e.g., health impact assessment, waste management, and river conservation). After 10 years of successful implementation, the Eco-Schools Network was established through the support of 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, and district and provincial officers. The role of the committee is to plan for the development of the IPM program, solicit funds, and 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 among member schools when organizing any activities of the Network.

The IPM schools that belong to the Network meet periodically at the provincial level to exchange experiences and plan activities and/or training. At the cross-provincial level, Network members meet every year at the National IPM Forum to which TEF invites all stakeholders from each participating province and other interested parties. 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 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 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 has 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 (1990) 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 as 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 those in many Western countries do. Without the principal's support, curricular or instructional change is unlikely to happen. Moreover, as suggested above, the IPM cur-

riculum requires radical changes in the teaching schedule, student and teacher behaviors, location of learning, and the role and personage of the teachers. Many of these changes could not happen without 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 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 part of the 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, 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 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 the MoE officials. As interest in the curriculum grew, 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.

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 provided key ingredients needed to nurture and grow the idea that sprouted from a single teacher.

In addition, as mentioned above, TEF adopted a different approach to ensure more involvement from the governmental officials in the IPM implementation by inviting them to participate in the planning and Training of Trainers workshops, to observe the student activities in

the fields, or to attend the semester-end student exhibitions. This creates a positive link among the NGO, schools, and the governmental agencies that leads to better cooperation and communication for future activities.

Support for Change From the Top-Down and Across Levels

While previous sections focused on bottom-up and outside-in change factors, dissemination of the innovation 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 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, FAO, United Nations Development Program (UNDP), and Danida.

The program continues to grow and has now expanded to 35 Agricultural Colleges. It is also being offered in vocational courses for farmers under the Department of Non-Formal Education in over 40 provinces. It has spread to countries such as Bangladesh, Cambodia, Philippines, and Vietnam that are seeking models for learner-centered schooling that are relevant to 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 is now visible at numerous schools in many parts of Thailand. The IPM program 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 article, 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 from the process of systemic educational reform. The IPM program represents a bottom-up initiative inspired 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 program’s development from its earliest stages. Outside-in support from 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 advice 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 the 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 the 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 forces of systemic change interact with local forces of change to produce a positive change. The reader might conclude that this

case study has simply identified important features of successful educational change previously noted by internationally-recognized scholars 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 education policies practiced globally, such as student-centered learning, and local cultural norms and traditions. There is little question in our minds that this feature would be found in many other Asian countries 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).

Author Note

The authors would like to acknowledge the contributions of the following educators whose interviews helped supply useful information contained in this paper: Miss Nuanchan Sunwan, Staff of Thai Ministry of Education, Special Project Unit; Mr. Mongkol Tianpolgrung, TEF Training Manager; Miss Saijai Dumkongsuan, TEF Trainer; Miss Pornpun Namrat, Teacher at Pa Ton School, Mae Sruay District, Chiangrai province, Thailand. The original writing of this case was commissioned by Microsoft’s Partners in Learning initiative.

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