



REAL Education was adapted from the “Farmer Field School” approach.

# Growing up in the REAL world

Andrew Bartlett and Marut Jatiket

## A REAL student

Chutima loves Fridays. That is the day on which the Nong Tharam school conducts “ecological system education”. These activities started three years ago at this small rural school (total 59 students) in Nakorn Sawan Province, Thailand.

Instead of sitting in the classroom studying books, Chutima and her friends in Grade 5 gather in the meeting hall every Friday morning and start the day with some “warming-up” games. The students then break into small groups and visit a nearby field where, according to the season, they make close observations of a rice or vegetable crop. They examine the soil condition, measure the growth of the plants, count the number of insects and collect other data. Back in the meeting hall they compile the data, prepare drawings and discuss their findings. Chutima and her friends then make their own decisions about what to do with the crops.

In the afternoons, the students at Nong Tharam carry out the activities that they have agreed upon: perhaps watering or weeding the plants, or removing pests from the leaves. The crops are grown organically, so Chutima never uses pesticides, but she does make regular observations of the beneficial insects to be sure they are controlling the pests. And at the end of the season, she gets to harvest the crop and eat it!

What Chutima enjoys most are her own experiments. She has planted Chinese cabbage in three pots with different soil types: sand, silt and clay. The pots are watered every day, and plant growth is measured every second day. So far, the cabbages in the silt have been growing better, and Chutima has observed that this soil type is better at holding the water.

Chutima has also captured butterflies and dragonflies, kept them in plastic containers, observed the life cycles of the insects and

used the information to produce her own small books. And she has made a series of educational charts, which she uses with her parents and younger children. The charts are based on a series of questions that are designed to encourage discussion and critical thinking, a technique that Chutima learned from her own teacher.

In 2003, at the age of 11 years, Chutima participated in a round-table discussion at the National Forum on IPM in Schools. Also attending the Forum were teachers from across Thailand, senior officials from the Ministry of Education and international visitors from eight countries. Chutima explained what she had gained from the Friday sessions at the Nong Tharam school: not just knowledge about the life cycles of insects, not just the skills required to grow rice and vegetables, but – most importantly – she had learned how to learn.

## REAL Education

REAL stands for *Rural Ecology and Agricultural Livelihoods*. REAL Education is an integrated learning process in which school children explore what is happening on local farms, gain an understanding of ecology, and develop critical thinking skills with respect to environmental, health and social problems.

REAL Education is now an international movement, but it started with one teacher in one school in Central Thailand. In 1995, Manas Burapa decided to organize practical sessions that would help his students understand the ecology of rice fields. He was concerned about the harmful effects of pesticides and sought advice from an NGO that is now known as the *Thai Education Foundation*. Manas and the staff of the Foundation adapted the “Farmer Field School” approach, a learning process that had been developed by the UN Food and Agriculture Organization to teach adult farmers about Integrated Pest Management (IPM).

The curriculum that emerged from this collaboration makes use of field observations as a starting point for learning about a wide

range of topics. For example, the relationship between insect pests and beneficial insects provides a living model of ecological processes, *and* it provides data and inspiration for lessons in science, mathematics, art and language. Furthermore, the process of getting students out of the classroom and into local fields helps to break the barriers that have been created between schools and the community, and encourages inter-generational learning.

The success of this low-cost approach to integrated learning has generated an interest in various branches of the Thai Government. The Ministry of Education has supported the development of an “eco-schools network” that involves the use of the REAL approach in four provinces, and has also awarded national prizes to a number of REAL teachers. Meanwhile, the Ministry of Public Health has taken an interest in “community health surveillance” activities that have been organized by REAL students, leading to a significant reduction in local pesticide poisoning. Provincial governors are also getting involved: early in 2004 the Governor of Nakorn Sawan began supporting the adoption of REAL Education in a number of communities on the banks of the Chao Phraya river, as a means to reduce water contamination with agricultural chemicals.



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Interest from other Asian countries is also growing. Education ministries in Cambodia and the Philippines have started their own REAL programmes, while pilot activities have been taking place in Bangladesh, Laos, Indonesia, Vietnam and Sri Lanka. Until recently, these activities were given a variety of names, including “Rice Field Learning”, “Children’s Participation Initiative”, and “Schools IPM”. None of these names fully captures the breadth of the subject matter, or the transformation that takes place in schools that participate in these programmes. For this reason, the participants of the International Workshop organized by the Thai Education Foundation in March 2003 chose the name “*REAL Education*” to describe the approach they are using.

### Learning REAL skills

At least half of the children in Thailand grow up in rural areas. The fields that surround their homes and schools provide these children with an ideal place for learning about a wide range of issues:

- Rice and vegetable fields are a good place for students to see biological and ecological processes taking place; here they can observe plants, soil, water, insects, other creatures such as frogs and fish, and how they interact with each other.



Chutima proudly showing her work.

- Scientific studies and experiments can be carried out without any expensive equipment (for example, study of insect life cycles, comparison of farming practices), thereby improving the organizational and analytical abilities of students.
- Information that students collect in the field can be used as a basis for integrated learning, bringing together subjects such as science, mathematics, language and arts.
- The study of local agriculture is an effective starting point for understanding health and environmental problems such as the misuse of pesticides, water pollution, soil erosion and the loss of biodiversity.
- Ecological agriculture brings rural schools into contact with the livelihoods of local people, creating a bridge between the concerns of teachers, children and parents.

Agricultural production is the single most important economic activity in Thailand, involving more people than any other form of employment. But rural life is changing rapidly, and farming families must be able to respond to the evolving constraints and opportunities. The ability to collect information, analyse problems, conduct experiments, and communicate what is being learned are skills that could make a profound effect of the livelihoods of millions of rural people in Thailand. These are the skills that REAL Education aims to develop.

### Impact

Ban Pa Thon is a small primary school located in Chiangrai Province. The school has 207 students in eight grades from Preschool to Grade 6. Most of these students are children of vegetable and rice farmers.

The school started REAL activities in 1999 with the involvement of two teachers responsible for Grades 5 and 6. To start with, these activities focused on life skills developed through rice and vegetable production. Later, the teachers integrated several other subjects and the curriculum was adopted by the entire school. Now, all students at the Ban Pha Thon school spend at least one hour in the field every Friday, followed by the processing of observations in the classroom. The information that is generated is also used in other sessions that take place from Monday to Thursday. This is seen as a way of responding to the Government’s reform of the National Curriculum that has placed new emphasis on local content and student-centred approaches.

This curriculum reform has provided an excellent opening for REAL Education. In other countries with a less enabling policy environment, REAL programmes have had to start outside of normal school hours.

REAL Education places an even greater responsibility on the shoulders of the teacher. In the beginning, it was difficult for teachers to change from the conventional teaching method using textbooks or rote learning, to facilitating learning in a practical setting. Agricultural ecology is also more demanding from a technical perspective. At first, many teachers found the technical contents of subjects like IPM for vegetables somewhat overwhelming. On-going training for teachers was necessary throughout the year for them to become confident and effective.

Mrs Khun Pornpan Namrath is responsible for Grades 5 and 6 at the Ban Pha Thon school, and she was one of the first teachers to use the REAL curriculum. She used to consider herself as an ordinary teacher, but REAL activities have produced a dramatic change in her teaching skills and attitudes. She has received the Model Teachers Award from the National Education Commission, a professional teachers award from the Chiangrai Teacher College, and she has also been invited to teach college students.

What Khun Pornpan is most proud of, however, is the transformation she has seen in the local community since students and parents became involved in REAL Education. She explains that as a result of the field activities, younger students quickly develop a strong interest in learning. "They are skilled in presentation, critical thinking, and they are more creative. Parents notice a great improvement in the ability of their children to carry out activities in an independent and responsible manner". There is also a nutritional benefit, because students can eat the vegetables they produce, either in the school canteen or by taking them home.

The older students have taken the learning process even further, by involving their parents in health surveys that focus on the use of pesticides in the community. As a result, a number of families in Ban Pha Thon have modified their farming practices. Some farmers have changed from cash crops to fruit trees, and many are now using bio-fertilizer to avoid the harm caused by toxic chemicals. Students have developed and tested their own formulas for bio-fertilizers, which they now produce and sell in the local market for 15 Baht per litre (approximately US\$ 0.37), compared with between 60 and 70 Baht for commercial brands. Profits are returned to the students, something that provides an additional learning opportunity! At the school "research station", students have also developed a new type of seedbed for vegetable crops, which involves mixing certain herbs and compost into the soil in order to prevent weeds and insects.

During the last five years, 137 students have graduated from the school after being exposed to REAL Education. Khun Pornpan says that Secondary schools prefer students from Ban Pha Thon and other schools that have been using the REAL curriculum, because they are able to take a lead in learning activities. One



Photo: Author

Fieldwork is followed up in the classroom.

such student is Ms. Tasanee Sithimart, currently in Grade 11, at the Viengpapao Secondary School. This is what she had to say about Real Education:

*"I gained a lot from the primary school, and since then I have been making use of what I learned. In secondary school I have conducted various experiments, and I am never afraid to think for myself or make presentations. I have gained respect from other students and teachers, for my knowledge and for various activities that have been very successful. I have an average of 3.50 or more on my tests, and I am now working as a member of the student committee involved in school plans and a range of activities. I would like to be a researcher because I like science and I can help my parents and other farmers to have better varieties and yield. That way they can make profits and not be in debt any more."*

### Where is REAL Education heading?

By May 2004 there were approximately 50 schools in Thailand using the REAL curriculum. Some project planners or managers might consider this to be a small number of target locations. But this is not a project, and the communities where REAL Education is taking place are not part of a donor target. There is no blueprint, no budget and no completion date. Instead, this is a steadily expanding *movement* that belongs to the people of Thailand. Both the Ministry of Education and the Thai Education Foundation have supported this movement, but the decision-making is being done by school principals, teachers, parents and students themselves. They are all involved in the planning, the implementation, and the on-going evaluation of the REAL curriculum, and in communicating the results to other people.

Maybe there will be 70 REAL schools in Thailand next year, or maybe there will be 700. Whatever the precise number, we can be sure that it will continue to increase. Perhaps the curriculum will expand to include activities relating to water quality, or community forestry, or malaria control. Whatever the precise content, we can be sure that it will continue to evolve as a result of the interests and creativity of the people who are involved. And who knows, new support might suddenly emerge from a Thai institution or a foreign donor. But whatever the source of funds, REAL Education will continue to be owned and organized by the schools and communities that are taking responsibility for their own future.

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Student presentation