

Peter H. Hansen * Interdisciplinary Student Projects in Thailand

American undergraduate students have only limited opportunities to study Thailand or experience Thai culture. Courses in the US on Thailand or the Thai communities of Southeast Asia are usually limited to part of a course in anthropology or religion. Similarly, educational experiences in Thailand are often limited to brief excursions with other American students or exchanges with universities in Thailand. In contrast, for more than ten years Worcester Polytechnic Institute (WPI) has sent students to Thailand to work on real-world projects for two months with government agencies, NGOs and universities. This note briefly describes WPI's program in Thailand, and a few of the projects completed by students early in 2002: waste disposal in an Isan village, small-scale hydroelectric power in a Karen village north of Mae Sot, information technology centers in Lamphang province, chemical safety at universities, the trafficking of women and children, environmental policies at industrial estates, and fire-safety in Bangkok's Klong Toey slum.

WPI's programs in Thailand are part of WPI's global network of opportunities for project-based learning. Located in Worcester, Massachusetts, WPI is a university with a focus on science, engineering and the management of technology that developed a pioneering approach to undergraduate education in the 1970s. Students learn how to learn by completing academic projects in the humanities and arts, the major field of study, and a unique interdisciplinary project on the intersection of science, technology, and society. These interdisciplinary projects provide the opportunity for scientists and engineers to consider the impact of their professional work through field projects conducted in teams of three or four students in close collaboration with faculty mentors.¹ During the winter of 2002, for example, the WPI students in Thailand had backgrounds in the following majors: biochemistry, biology, biotechnology, biomedical engineering, chemical engineering, civil engineering, computer science, electrical engineering, industrial engineering, international studies, mathematics, and mechanical engineering.

Working in interdisciplinary teams, students tackle a wide variety of issues that transcend disciplinary backgrounds and place them in the field working with local communities and sponsoring agencies. The projects begin on campus at WPI with a semester-long course in Thai language, and an intensive course on research techniques in the social sciences relevant to their project. During this period of preparation, the students themselves define the scope of their project in consultation with faculty advisors. When the students arrive in Bangkok each January, they are ready to work right away with the organizations sponsoring the projects. By the end of two months in Thailand, each team has assessed a significant issue in depth and made recommendations for implementation to the project sponsors or the communities in which they worked.

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¹ See also Richard F. Vaz, "Connected Learning: Interdisciplinary Projects in International Settings," *Liberal Education* 86 (Winter 2000): 2-9, and Peter H. Hansen, "International Education and Sustainable Development: An American Experience in Bangkok, Venice, and Guangzhou," *The Environmentalist* 15 (1995): 252-56. Also <http://www.wpi.edu/Academics/Dept/IGSD/>

Consider the experience of several teams this year. In 2002, one group of students worked in the village of Sang Khom in the province of Udon Thani to evaluate the current waste disposal system, assess the feasibility of alternative systems, and develop a proposal to improve waste disposal. The team measured the existing landfill, tested water samples, and interviewed villagers and the Tambon Council about health and environmental problems related to leachate contamination from the landfill. Later they presented their recommendations regarding the location of a new landfill and proposals to raise awareness of recycling and waste reduction to the Tambon Council.

Some projects follow in the footsteps of students from previous years. In Bangkok, the Dhang Prateep Foundation has sponsored a series of projects including this year's study of electricity-cutoff in the event of fire. Students worked with the local volunteer firefighters, the police firefighters, and the electricity board to design a new system to improve communication between these groups in order to reduce the time it takes to fight the fire. They also wrote a brochure for schools in the Klong Toey community to educate children about fire hazards. In the Mae Moh district of the Lamphang Province, another series of student projects have studied quality of life in the shadow of a major power plant. This year a team of students lived with families in four villages in Mae Moh to assess the viability of Information Technology (IT) Centers in each village. The students surveyed stakeholders of the centers and evaluated the very different local conditions in the villages, resulting in recommendations to enhance the sustainability of each center.

Many of the recommendations made by these students are already being implemented. In 2001, a group of students installed a small solar power generator in a Karen village to provide electricity for language instruction. This year another group worked in a different Karen village to assess the feasibility of installing a micro-hydroelectric system which diverts a small amount of water from a stream to generate electricity for a school. Working with the Taipei Overseas Peace Service in Mae Sot, the students trekked to the village of Kre Khi in Tak province, surveyed the stream, interviewed villagers, and identified equipment and possible sources of funding. A successful grant proposal written by the students is currently funding construction of the system they proposed for the village.

In all of these interdisciplinary projects, students learn about Thailand and the importance of making recommendations that are appropriate to the local culture and conditions. Solutions that seemed possible as they prepared for these projects in the United States are reevaluated in light of their experiences in Thailand. Not only do many communities in Thailand benefit from this work, but the students themselves often view them as life-changing experiences. Students emerge from these projects equipped with interpersonal skills from working in teams, committed to making the world a better place, and possessing a deeper understanding of Thailand. These real-world projects offer a possible model for future efforts to teach a wide variety of students about Thailand and Thai culture.