

EDITOR'S NOTE: This article is the second in an occasional series on international development and international higher education. Each article focuses on one kind of international development work. The first article, "Fledging the Phoenix," on reconstruction efforts after natural disasters was published in the July/August 2009 issue.

If YOU'RE A TWENTY-FIVE YEAR OLD WOMAN living in the Punjab region of India, chances are you married in your teens, have children, have little experience with computers, cell phones, or other technology and—no matter what your employment obligations—are expected to be home each afternoon to cook dinner, help kids with homework, and run the household.

Such cultural expectations are among several factors putting pressure on a primary school system whose teachers are almost exclusively women—a system that is straining to educate children in a nation of one billion people, at a time when the world places increasing demands on educators to turn out well-rounded, globally sophisticated, and technologically savvy students.

This is where Bill Gaudelli of Columbia University's Teachers College steps in. Co-leader of the college's Global Education Leadership Project in India, he is hoping to fill the gaps he perceives in India's primary education system—in hopes that those graduating from the nation's elementary, middle, and high schools can one day compete effectively in the global economy.

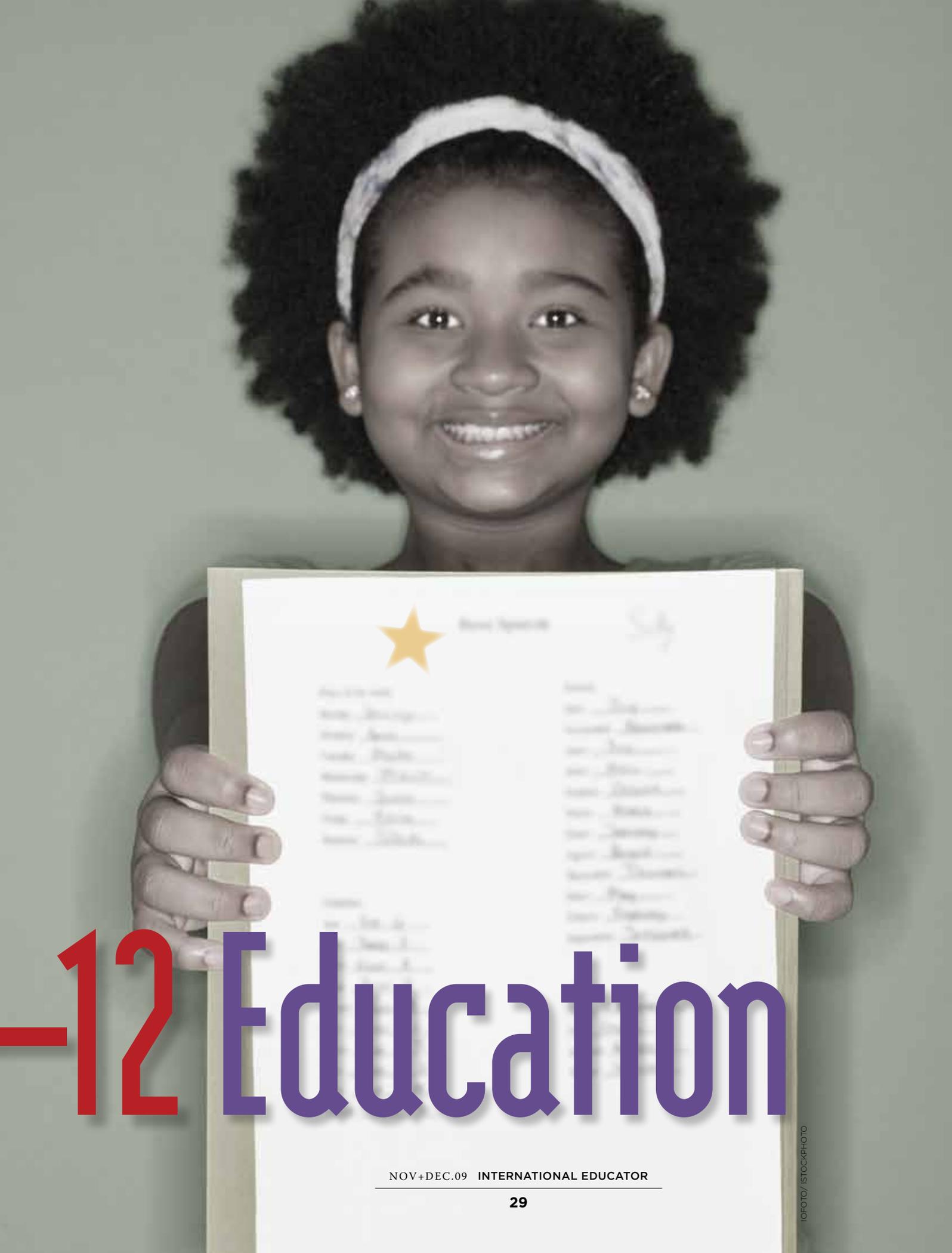
Gaudelli's project in India is one of several that U.S. universities, colleges, and educational organizations have launched to improve K–12 education in the world's developing nations.

"There's a major concern that the schooling (in India) doesn't encourage people to be free thinkers and to develop careful inquiries about the world," Gaudelli says. "(We try) to develop students who are thoughtful and creative, aesthetically aware, connected people who can frame questions, come to conclusions, and act on those. That certainly fits better in the globalized twenty-first century."

Higher education institutions, professors, and students in the United States are reaching out to developing countries to help improve K–12 education systems and prepare their students for competition in the global workforce.

BY DANA WILKIE

Developing K-



-12 Education

India

WHEN A DELHI NGO known as the Khemka Foundation grew concerned that India's primary schools weren't encouraging students to think independently, it approached Columbia University's Teachers College, which is considered the nation's oldest and largest graduate school of education.

Funded by a \$750,000 grant from the Global Education and Leadership Foundation, Teachers College began developing a leadership curriculum for junior high and high school students at a select group of private and religious schools in India. The hope was to nurture leadership skills in eighth through twelfth grade students in 23 private and religious schools, to financially support the standout students through college, and to ultimately help those same students find their way into public service.

Working with the Khemka Foundation, Gaudelli and his team began devising a

training program in language arts and math for Indian teachers that could be taught two to three times a year. These teacher-education courses are taught in English by a team of 12 faculty and doctoral students. So far, the program has trained 75 educators—most of them women—in Delhi and Gurgaon. The program is scheduled to continue through 2012.

"By and large, Indian teachers aren't conversant in the modern Western way of approaching education," Gaudelli said, noting for instance that the concept of 'multiple intelligences'—that children learn in different ways, whether auditory, visual, or imaginative—is foreign. Also foreign is the notion of "cooperation" in a classroom, or of using multimedia as a visual resource. Many teachers, even in some fairly elite schools, are not well grounded in developmental theory, learning theory, or other related disciplines.

"Teacher education there looks a lot like 'here's how to plan a lesson.' It's very bureaucratic and technocratic," Gaudelli says.



Students participating in the "Kids' Books Bolivia" project with the School for International Training hold up their books that they wrote and researched in fall 2008.



A case in point: teaching fractions. The traditional Indian approach is to have the teacher stand in front of the room, explain what fractions are using a chalkboard, then require students to work equations again and again until they grasp the concept. A Western approach tends to be more student-centered, framing the mathematical concept from a child's perspective, then using manipulatives and other "play" approaches to help cement the idea.

After the Indian teachers attend their workshops, Gaudelli's program has them delivering 12 "leadership" sessions during the course of the school year that is mandatory for all eighth and ninth grade children at participating schools. Students work on skills in teamwork, critical thinking, writing, public speaking, and active listening. They engage in role-playing and exercises that involve moral decisionmaking. They learn to identify their own leadership strengths and weaknesses and to discuss the qualities of national and global leaders. They also participate in conflict management workshops, an adventure camp and organic farming, and spend time with street children.

"The idea is to create a foundation for students who will then go on to study at university, earn degrees, and come back to India—if they study abroad—and work in the public sector in ways that reflect the values identified in that curriculum," says Gaudelli, noting that one of the top values being promoted is "ethical leadership" in government. "If in the end, people cannot frame questions, marshal evidence, and draw conclusions, then education has taught students merely how to memorize."

On his first trip to India to consult with the Khemka Foundation, Gaudelli discovered that social customs in the Punjab seemed to reinforce the problems about which the Khemka Foundation NGO was concerned: Women—and the vast majority of primary school teachers are women—tend to have children at a young age and aren't allowed to travel far from their homes to attend training programs, which is a problem for teachers living far from where the Delhi and Gurgaon workshops are conducted. Moreover, such women often have a glaring lack of technology in their background and are typically unaware of current discussions or trends in teacher education.

"There is a pattern in rural areas where women generally are expected to be near the home in service of the family, and to be the primary caretakers of children," he said. "It starts at a fairly young age. Certainly by the time they are 17, 18, 19, many have families of their own."

So far, the program team has noted how eager Indian teachers are to participate—when time allows. "These women have so many other responsibilities in their families, communities, schools, that the lead-



SIT student Will Brunnuell reads books to children in Cochabamba, Bolivia

ership training program is not the highest priority," said Gaudelli. "But, when they are with us, they are fully engaged, eager, and highly appreciative of the work we do with them." There is sometimes pushback from local teachers, typically from more veteran educators. "They may say, 'This is great, but I can't do this because I don't have the technology in my school,'" Gaudelli says. "Our approach has been to try to make it modular so we say, 'If you don't have the technology, here's a way around this,' such as using

documentary images rather than videos."

At the moment, Gaudelli's biggest challenge, which remains the top challenge for most colleges and universities working to improve primary school systems in developing regions, is money. Gaudelli's program is supported by money from the Khemka Foundation, which in turn is supported by the for-profit Sun Group with which it is affiliated. "The program is a bit up in the air right now," he acknowledges. "The bills haven't been paid of late, so we're renegotiating the contract."

Bolivia

IN BOLIVIA, where primary school challenges include a lack of books, libraries, Internet access, and other resources key to quality education, schoolchildren are typically exposed to books that are expensive, imported, and culturally irrelevant.

When two of Heidi Baer-Postigo's students at Vermont's School for International Training (SIT) wrote a bilingual children's book for their research project, Baer-Postigo was so inspired by their product that she launched the "Kids' Books Bolivia" project. Started in the spring of 2008, it has resulted in eight sample books that have been well received in Bolivia, as well an invitation from a well-known Bolivian publishing company to co-edit them. Heidi's group just recently raised the money to publish all eight books.

Researched and written by undergraduate students at SIT's semester-long, education abroad program in Cochabamba—of which Baer-Postigo is academic director—the books cover the daily life and customs of indigenous Quechua and Guarayo communities; how migration affects Bolivian families; children who work in the streets; and how modernization and global warming are changing the traditional cultivation of quinoa, the ancient grain of the Incas.

Mikaela Lefrak was one student on the SIT Bolivia program this past spring who wrote such a book. Her research included volunteering at a public nursing home in Cochabamba and interviewing government social workers about elderly care.

“The thing that surprised me the most was the enthusiasm for reading from all of the children with whom I worked,” said Lefrak, an English literature major at Vermont’s Middlebury College who found her biggest challenge was writing the book’s Spanish portions with only a nuts-and-bolts knowledge of the language. “Once, when I was illustrating some of my pages in a cafe, two young shoeshine boys came up to me and asked me what I was drawing. I ended up telling them my entire story for the book I was creating, and we drew a number of pictures together. Their enthusiasm for the story and their comments on my drawings invigorated me to keep going in my tedious editing process and inspired me in so many ways.”

During the spring 2009 semester, Rossana Espinoza, a Bolivian native who immigrated to the United States with her family when she was 10, joined the program. Retuning to Bolivia for the first time in a decade as an SIT student, Espinoza conducted an independent study of how to promote reading for Bolivian children in concert with several libraries in Cochabamba.

“I wanted to...make reading more fun,” Espinoza says. “I chose books that were made in Bolivia and had stories that were connected with Bolivian culture. The SIT books provided good stories and scenarios the children could relate to, as in “My Mommy Is Not in Bolivia with Me”—about parents who emigrate to other countries to work, leaving their children behind. The experience was amazing.”

The education abroad program, which focuses on the challenges of development and globalization in a diverse and multiethnic coun-

try, includes a full load of academic coursework and educational excursions to areas such as La Paz, El Alto, Lake Titicaca, Sucre, Potosi, and the tropical lowlands. Students spend a week living with rural *campesino* families and conduct four-week independent study projects on topics of their choice almost anywhere in Bolivia.

Ethiopia

ZRA SIMON HAS BEEN WORKING with World Learning’s Ethiopia Program since January 2008 advising programs that provide basic education focused on enhancing the quality and equity of primary education, as well as with schools to help children affected by HIV/AIDS by organizing community support.

Past efforts to convince children to come to school, and keep them there, are starting to pay off, but with that success has come a shift in school demographics that has proven challenging. “We are now witnessing some of the most difficult to reach children joining school,” says Simon, whose work with World Learning, focuses on children in the first through eighth grades. “Girls in particular are now attending primary school at unprecedented levels, though in many cases they’re still sitting at the back of the classroom, they lack parental support, or they are having difficulty finding family support to continue beyond grades four or five, which are the crucial break-off point. We focus a great deal on girls’ education issues.” He notes that these problems are particularly severe in rural areas, where even



the most basic teaching and learning supplies are difficult to obtain.

World Learning—a 77-year-old, organization with offices in Vermont and Washington, D.C., that also sends university students to countries struggling with poverty and conflict in anticipation that they can help communities learn self-reliance—has been working in Ethiopia’s education system since 1996, often teaming with community groups to design programs that address some of the main obstacles to education, including the spread of HIV/AIDS. Many of World Learning’s Ethiopia programs provide workshops that train local teachers how to move their communities to be more engaged in the education process, as well as how to strengthen their skills in school management, financial and information management, in-service teacher training on topics such as active learning, mentoring of students, classroom teaching-learning processes, providing water and health services, preparation of teaching kits, and psychosocial support.

Often after World Learning has invested in these teachers, however, they leave the system. Moreover, after having worked with Ethiopia’s education structure over the past eight years, Simon, senior technical specialist for World Learning’s Education Programs, is grappling with the longer term question of what will happen once these well-educated young people enter the job market. “After having left an agrarian or pastoral society at the secondary school level, youth often find it difficult to return to that context,” he explains. “Being situated in a peri-urban area can be both an advantage and a risk, depending on what the employment prospects bring.”

World Learning, which also invites international visitors and students to the United States for exchanges and academic programs, has worked in more than 20 other countries, often through community partners to design programs that address some of the main obstacles to human development, such as the spread of HIV/AIDS, the marginalization of children, the global education crisis, and the widespread need for government accountability and an active civil society.

Some of World Learning’s other programs in Ethiopia help parents become more aware of the value of education and of ways that they can be directly involved in their children’s care, support, and the overall learning cycle. Others increase community awareness about their “ownership” of local schools and their responsibility for sustaining school improvements. Still, others integrate health and drought-relief responses into primary education.

Jordan

P RIMARY SCHOOL s in Jordan are places where many teachers are hired without professional training, where there is limited access to professional development, where instruction is often rote and uninspired and, and where government schools often have classes of 40 or more. Another one of Teachers Colleges’ international programs is one that works with the Queen Rania Teachers Academy to improve the quality of teaching in the nation’s primary schools

The public K–12 school system in Jordan is modeled, in part, on the British system. The nation’s Ministry of Education and its 37 directorates, or districts, oversee about 3,200 public schools. The Ministry is responsible for all aspects of education, such as developing textbooks, classroom assessments, and



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course-level grading policies, teacher training and supervision, and a national testing system.

About 1.1 million students are enrolled in Jordan’s K–12 public schools. Public education is comprised of three levels: a one-year optional kindergarten, a compulsory, 10-year basic education (grades 1–10), and an optional, two-year, secondary education (grades 11–12).

On international tests, Jordanian students out-perform most of their peers from other Arab countries. In 2003, eighth grade Jordanian students were above the international average in science and just below in mathematics.

But two summers ago, only 54 percent of Jordan’s secondary students passed the critical Tawjihi Exam, which qualifies students in academic programs to enter university and students in vocational programs



stream to enter community college, universities (if they pass additional requirements beyond their vocational programs), or the job market.

The teacher-hiring process has a powerful influence over the stability and effectiveness of the school system, and the Ministry of Education has criticized that process sharply. Teachers are hired centrally through the Civil Service, a government unit independent of the Ministry. The process begins when the Ministry submits a request for new employees after polling the directorates for vacancies in teaching positions. Typically, the Ministry requests about 5,000 teachers each year, but only 3,000 actually show up for work. The criteria for hiring are based simply on whether applicants hold a bachelor's degree and their length of time in the application pool. Regardless, fully 18 percent of Jordanian teachers hold only a high school diploma. Some teaching positions are more difficult to fill than others, and hence, there are shortages of qualified teachers in critical areas such as math.

Also, teaching is a low-status profession in Jordan and is perceived as requiring little technical training.

Low salaries (roughly \$300 month) promote this perception and contribute to a high turnover rate among male teachers, who often leave to take higher paying jobs to support their families.

Queen Rania is interested in initiatives that improve the public image of teaching and provide access to high-quality professional development. In partnership with Jordan's Ministry of Education, Columbia University opened a regional center in Amman to help introduce such improvements.

In August 2008, Teachers College faculty and consultants from other universities—representing the academic disciplines of teaching, math, science, technology, and English—traveled to Amman on a five-day retreat to design a training program for Jordan's new public school teachers. More than 100 prominent Jordanian educators attended.

After interviewing Jordanian science and math teachers about the concepts their students have difficulty understanding, the U.S.-based team began working with the Queen Rania Academy to create workshops that might help teachers address these

student struggles. The concept behind the workshops is to help primary school teachers think about new techniques for not only teaching lessons, but for helping children who don't understand them. In math, for instance, children can have great difficulty with the concept of proportion. In science, physical concepts such as density and force can be problematic.

A "leadership" workshop was held with school principals last April. Between April and June, the team conducted workshops for teachers focusing on math and writing in grades 4–8, and science in grades 6–10. At the conclusion of the first, the 80 teachers who attended stood to applaud. Several from Teachers College remained behind to offer local teachers a three-week course in teaching English as a second language. "One person told me that when the science team comes back, the teachers will be lining the road from the airport to get access," said Tom Corcoran, co-director of the Consortium for Policy Research in Education at Teachers College, the oldest federally funded education policy center in the United States. "The teachers have not had a lot of professional development directly related to the curriculum they teach or that addresses the realities of their classrooms."

Ideally, the workshops are led by two Jordanians and two Americans, with the latter working with translators. The hope is that by the third year of the program, all course materials will be translated into Arabic and all workshops taught by Jordanians.

While Jordanian teachers are enthusiastic about professional development, the training team is under pressure from its major donors—Intel, the World Bank, USAID—to demonstrate that they are reaching large numbers of people, and doing it quickly. Often, however, this happens at the expense of quality.

"We are trying to persuade them that in the long-run it is more efficient to focus on quality," says Corcoran. "Turn-key training has been shown over and over again not to work very well....yet (such

organizations) continually use that model. We've been trying to hold firm for what we think the evidence supports—that even if it takes you longer, it's better to do it right."

And while Columbia's Teachers College would like the program to take on more Jordanian universities as partners, there is some tension between the Education Ministry and universities that prevents that. Universities see the Ministry as meddling, controlling, bureaucratic, and not respectful of academic freedom. The Ministry sees the universities as unresponsive, too focused on publishing, and not committed to better preparation of teachers.

"It has been difficult to have Education Ministry people and university people in the same room to discuss these things," says Corcoran, a curriculum expert who has played a major role in Teacher College's work in Jordan.

Thailand

THE JORDAN PROJECT has a new spin-off in Thailand, where Corcoran has worked on science education at the lower secondary level (ages 12–14) in the Phangnga province. Corcoran led a project evaluation of the Inquiry Based Science and Technology Education Program (IN-STEP), a public-private science education initiative designed to improve teaching and learning in science in Thai lower secondary (ages 15–17) schools.

In an article published in the *Bangkok Post* last July, Corcoran outlined his views on the challenges in the teaching and learning of science in Thai secondary schools.

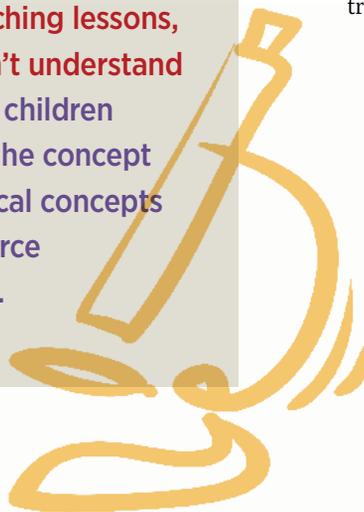
"The biggest problem that students face is time," Corcoran told the paper. "The problem is, basically, at Thailand's lower secondary level. Only 120 minutes a week are allocated to science. That's about half of what most of the rest of the world provides for that age group. A typical schedule would include 240 to 250 minutes a week for science."

He added that the limited time could be an obstacle for classes in following an inquiry-based methodology, which is the ideal technique for studying science.

"You can't do a good job of covering all the topics in the Thai curriculum and involve students in investigation in 120 minutes if you try to cover all the topics. If you try to do it, the teacher would be practically forced to give a lecture," he said.

On the matter of whether teachers are a source of the problems, he said: "I would say (the lack of sufficient) time is actually a bigger problem than teachers (are). Teachers are not the problem. It is true that some teachers don't have the science background that you would like (them to have) and some teachers need to know more about pedagogy (and) about inquiry. But even good teachers are going to have trouble doing (an acceptable) job within 120 minutes."

The concept behind the workshops is to help primary school teachers think about new techniques for not only teaching lessons, but for helping children who don't understand them. In math, for instance, children can have great difficulty with the concept of proportion. In science, physical concepts such as density and force can be problematic.



Corcoran mentioned other factors that can cause problems in the primary school classrooms, such as large class sizes, the regular rotation of principals among schools, inadequate materials and equipment, and disruption of the classes, especially when students are pulled away from science classes to participate in extracurricular activities.

Among other Teachers College programs working to improve K–12 schools abroad are those that: deliver speech and hearing therapy to children at a school for the deaf in La Paz, Bolivia; develop pre-kindergarten education standards in developing countries; introduce inquiry and argumentation skills to Columbian schoolchildren; train Bhutanese educators to gear teaching toward the global economy as they teach schoolchildren in the eastern Himalayas.



Bulgaria

SUCH CROSS-CULTURAL EDUCATION PROGRAMS can be reciprocal, with U.S. students and researchers arguably gaining the most from the partnership.

For instance, mathematics teachers in Bulgaria have a reputation for turning out secondary math students who are among the top students in the world. In international mathematics competitions, they have consistently taken top prizes for the past two decades.

Dimitar Dimitrov and Beverly Shaklee—both Ph.D.s at George Mason University’s Center for International Education—want to discover what Bulgarian math teachers might be doing that could help U.S. schoolchildren who are underrepresented in math disciplines, particularly girls. The two researchers are

in the first stages of designing a program that could help them answer that question.

“In the United States, points of access in mathematics courses are determined very early in the sequence of education, so a child who does not have access to higher level mathematics is very unlikely to be a ‘high performing’ student in mathematics in high school,” said Shaklee, whose program works in concert with the St. Cyril and St. Methodius Foundation of Sofia, Bulgaria. “One part of the project is to conduct research with the Bulgarian mathematics teachers to determine why and how they are so successful with their students. It could be a difference in pedagogy, the quality of the students, or expectations—for instance, giving students more challenging work in mathematics enhances the likelihood that they will become more successful in mathematics.”

The program they envision would include a series of professional development sessions where Bulgarian- and U.S.-based middle school math educators and students could exchange information on strategies, pedagogical methods, and the use of technology.

“All programs are intended to be reciprocal in nature; we’ll learn from one another,” said Shaklee, whose program has so far been supported financially by the center. “Most likely there are skills, concepts, or pedagogical techniques in both groups that will be shared to strengthen the teaching abilities of all. It is never a one-way conversation.” **IE**

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