By Kristen Weatherby

Project-Based Learning
Around the World PART 2

ISTE and Microsoft's Partners in Learning joined to create project-based curriculum that can be adapted for classrooms across the globe. In our second installment, we look at how these PBL lessons are being localized and used in Estonia and Hong Kong.

I n Part 1 of this article, I introduced you to Microsoft's worldwide K–12 education initiative, Partners in Learning, and gave you some background as to why Microsoft was interested in developing project-based learning curricula for teachers to help them better integrate technology into learning and teaching (*L&L*, February 2007, pp. 12–16). We discussed the partnership with ISTE in creating project-based learning curriculum as part of Partners in Learning and explored the use of the curriculum in Denmark, a country that has a long history of integrating technology into education and is a longtime supporter of project-based learning.

It's time for you to get your passports ready once again, because this article will take you on a trip to two very different locations and two very different education systems, both making great use of the project-based learning curriculum. First, we'll continue to head east from Denmark to Estonia, and then we'll cross Asia to
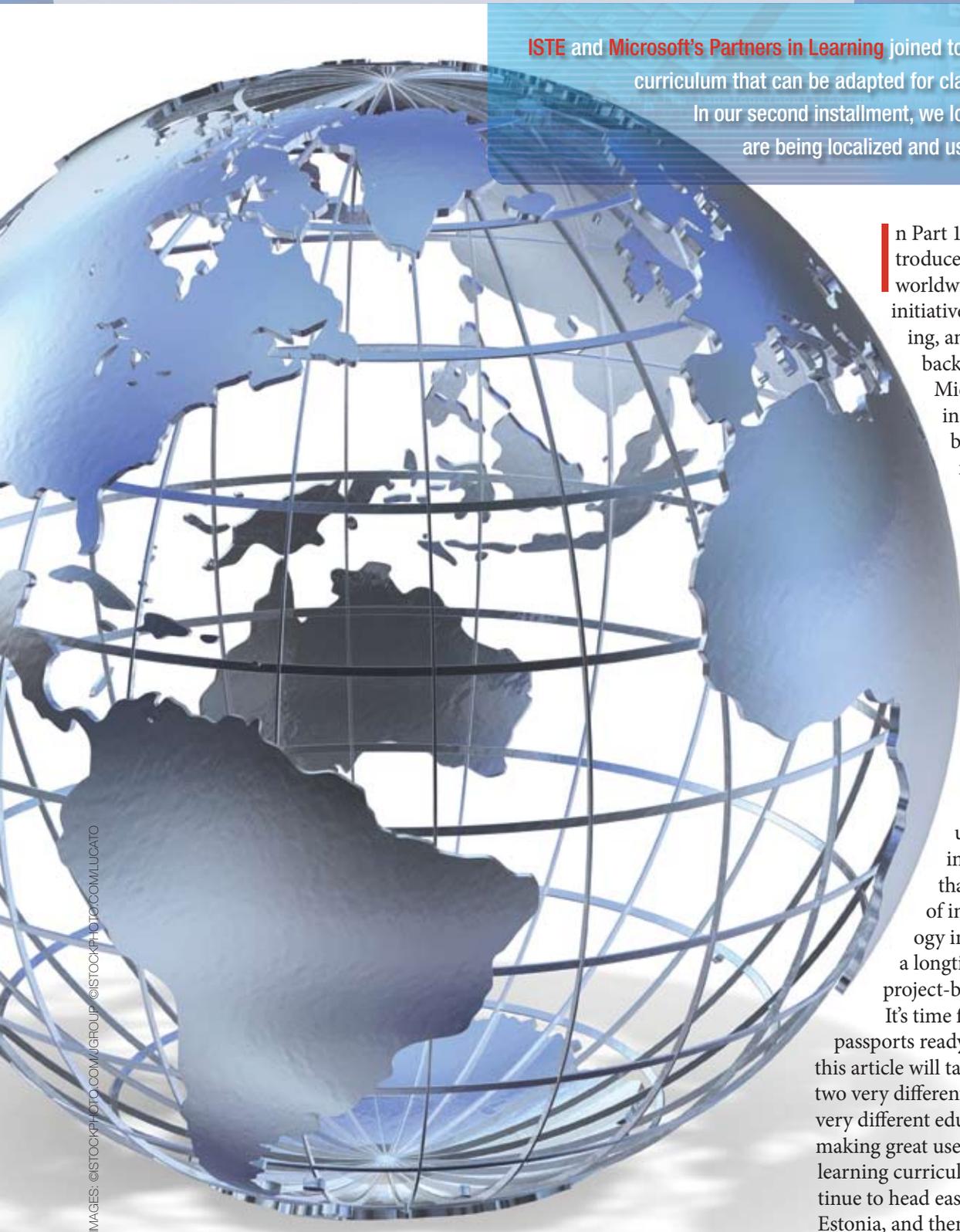
explore the use of project-based learning in Hong Kong. Pack your bags and let's go!

Estonia? Estonia!

When I told friends and family that I was traveling to Tallinn, Estonia, in April, 2006, the common response I received was, "Where?" Estonia is the smallest and northernmost of the three Baltic states (Lithuania and Latvia are the others). It's directly across the Baltic Sea from Finland, and the Estonian language is very similar to Finnish. The population of Estonia is about 1.3 million, making it about the size of San Antonio, Texas. Estonia regained its independence from the former Soviet Union in 1991 and became a full member of the European Union in 2004.

Here are some fast facts on Estonia:

- 601 primary and secondary schools
- 170,994 students (2006–07 year)
- 15,800 teachers

There are approximately 19,000 computers available in Estonian schools. Of those computers, only about 9,300—roughly half—are available to students, giving Estonian schools an overall ratio of 18 students per PC in schools. Most computers in schools (approximately 60%) are located in computer labs, with only about 28% in classrooms and the remaining 12% in administrative offices.

Today, almost every school in Estonia has a few teachers who are able to integrate ICT into the subjects they are teaching. By far, most teachers are not confident enough to do this and save it to do administrative classroom tasks. The reasons for this are as they are in many countries: the average age of Estonian teachers is about 50 and many don't want to change, and the state-mandated curriculum is so packed already that there isn't time for new content.

As a result, 25% of students in Estonian schools spend only about 30 minutes to 2 hours on a computer at school each week.

A Tiger's Leap to 21st-century Skills

This little country is not content with these statistics, however. The government recognizes that Estonia does not have many natural resources to offer the global market, and has decided to invest in human capital, in the form of a trained IT workforce. For that reason, in 1997 Estonia's Parliament made what was at the time an unprecedented declaration that access to the Internet is considered a basic human right for Estonian citizens. Since then, progress has been made all over the country—from large industries such as banking to remote villages—in getting technology and the Internet integrated into all aspects of work and daily life.

To help with technology integration in schools, the Tiger Leap Foundation was created. The TLF is responsible for the strategy, planning, and all tactical matters (purchasing computers, providing professional development, and so on) surrounding technology in all of the nation's schools. One of the other mandates of the TLF is to be the link between the Ministry of Education and corporations who want to provide resources to Estonian schools. This is how Microsoft and Partners in Learning were able to enter the scene in Estonia.

Project-based Learning in Estonia

Estonia's education system has been undergoing a process of curriculum reform for the past several years. Since 1995, the curriculum used in schools has been largely decentralized, with teachers and schools having some freedom to use the materials they want to accomplish the goals set forth by the Ministry. However, much of the curriculum that is available is very fact-centered and does not allow students to learn skills they'll need in the real world, such as working in teams, creative thinking, delivering presentations, and so forth. Project-based learning is not very popular in Estonian schools yet; currently only those teachers who know about it are choosing to use it with students.

In February of 2005, I brought two ISTE trainers—Lynn Nolan, senior director of education leadership, and Mila Fuller, director of strategic initiatives—to snowy Budapest, Hungary, to participate in the second regional Partners in Learning curriculum training. Attending that training were representatives from the TLF, who were there to learn more about the curriculum and determine whether it could be a good fit for Estonian schools. After the training, the people from the TLF were among many countries that made the decision to use this project-based curriculum locally.

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The Making of ProjektiPaun

When the TLF team returned to Estonia, they worked with Microsoft's local academic program manager, Lina Abola, to begin creating the project plan for the localization and implementation of the curriculum. The foundation nominated experts to do the translation and localization work. They found that unlike the Danish team, they didn't need to make any major changes to the content. The localization team simply added some local Web sites and reference materials in Estonian for the students and teachers to access. As it was in Denmark, the curriculum was renamed, "Projektipaun," which in Estonian roughly translates to "Project Backpack." The finished curriculum was printed in hard-copy books and posted online to a national Projektipaun Web site. Final materials were reviewed for quality by the TLF and were then translated into Russian, as approximately 30% of Estonia's teachers still speak and teach in Russian.

Once the curriculum was localized, representatives from the TLF began executing the national training program. Regional "master trainers" were trained in the use of this curriculum in the classroom and are responsible for training all teachers in their respective regions. The master trainers generally work with 12–14 teachers in each free, two-day training session. After each course, teachers have to complete a course evaluation to receive a certificate of completion and professional development credits for attending the training.

What Do the Teachers Think?

From October 1, 2005, to April 10, 2006, the 24 master trainers conducted courses for 1,000 Estonian teachers. Overall, the teachers responded very favorably to the materials, with 89% of them agreeing that they can use these materials in their everyday work. Indeed, one trainer reported that every

teacher he trained felt that they could make at least one of the projects work in their subject area, commenting that "Even the physical education teacher would like to work with the project of World Heroes Hall of Fame adopting it into Famous Skiers from Võrumaa or something of that kind."

The only problems that occurred were with the format of the training. Although many teachers thought the two-day training wasn't long enough and wanted even more time to develop and share ideas, some teachers weren't comfortable with the format. The training was designed to put teachers in the students' shoes, with the trainers walking teachers through the projects as if the teachers were the students. One trainer commented, "There were teachers who started to play along enthusiastically and some who considered it to be a waste of time... They were like schoolchildren who think that once they are ready, they can leave."

Nonetheless, the positive feedback far outweighed the negative, and Microsoft and the TLF have plans to continue these trainings in Estonia. They are taking the next step of approaching the pedagogical faculties of universities to discuss how to integrate this curriculum in the universities' programs for training future teachers in Estonia.

Journey Across the World to Hong Kong

We're now going to take a quick trip (if that's possible) across the globe to Hong Kong, which is located on China's southeastern coast and is made up of 237 islands and one mainland portion of land. The total area of Hong Kong is only 422 square miles

(roughly the size of Phoenix, Arizona), most of which is uninhabitable, rugged mountains.

Here are some fast facts about Hong Kong:

- Population: 6,940,000
- 1,286 primary and secondary schools
- 50,801 teachers
- 936,015 students

As Hong Kong was for years a British colony (it is now a Special Administrative Region of China), its system of education for primary and secondary schools largely resembles that of England. English is still used by more than 30% of the population, and all education materials must be produced in English and Chinese.

The computer-to-student ratio in Hong Kong is similar to that of the United States. There are 7.4 PCs per student in primary schools and 4.6 PCs per student in secondary schools. All of Hong Kong's teachers have basic IT literacy skills, and 89% of them have intermediate skills. In addition, nearly 100% of teachers are able to successfully integrate technology into teaching and learning—rather than just using it for administrative classroom tasks.

It's obvious that technology is a priority in Hong Kong schools, and there is a reason for that. There is much competition among schools due to the fact that parents have a free choice of where to send their children for school. Because Hong Kong has been suffering from a low birth rate for years, there are more schools than are needed for the number of students. On average, 10–20 schools are closed each year by the Education and

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Manpower Bureau of the Government (Hong Kong's Ministry of Education). The threat of closure causes much competition among schools to attract more students. Schools have found that teaching 21st-century skills and integrating technology into learning can be a powerful way to attract students, as parents see their children learning relevant skills and staying engaged in these schools.

PBL in Hong Kong

Teachers in Hong Kong are already familiar with the concept of PBL, and it is being promoted by the government and by some school leaders as an alternative to traditional curriculum. As a result, many teachers are choosing PBL curriculum to use in their classes.

Microsoft's academic program manager in Hong Kong, Mei Mei Ng, reviewed the new curriculum and thought that it would meet a variety of needs in Hong Kong's primary schools. First, the curricula currently available for primary schools is either purchased from third-party publishers or developed by the teachers themselves. There isn't a strong framework for ICT integration in much of this curriculum. Because technology integration and engaging students are such priorities for schools wanting to avoid closure, Ng and her team determined that this curriculum would be a good fit for Hong Kong schools.

To make it useful for Hong Kong students, the curriculum needed to be translated into Chinese, but even the English version needed to be altered to make it more appropriate for local needs. The localization partner also added some local resources for each learning project, including, for example, the Hong Kong Space Museum in the projects on "Space Exploration" and a local Olympic hero, Lee Lai-San, in the "Heroes and Leaders" projects.

The finished curriculum was posted to the government's password-protected curriculum portal (http://ms.hkedcity.net) for free download by teachers as a resource to complement their existing curriculum. Microsoft Hong Kong has also distributed it to 100 schools as part of a curriculum package that includes another piece of Partners in Learning curriculum designed to teach schools how to set up student-run technical support centers. The materials are being enthusiastically received by schools that are eager to attract new students, and I'm looking forward to reading the research that shows what the teachers think after using the curricula in the classroom.

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