

By David and Margaret Carpenter

All Aboard!

How a New Curriculum-Development Review Process Brought Teachers, Administrators, and Learning Specialists to the Table and Resulted in Some Innovative Uses of Technology

Instructional technologists can succeed in implementing 21st-century skills instruction only when those skills are seen as relevant to the pressing agendas that coexist in their schools. Otherwise they run the risk of being just more noise that teachers must respond to and may filter out. So how can they be seen as part of the solution instead of another nagging problem?

At Hong Kong International School (HKIS), technology instruction gained traction when it was addressed alongside

several curriculum initiatives. Here's how a new curriculum-development review process resulted in some innovative uses of technology in the classroom. (See "Key Elements of the New Curriculum Process" on page 19.)

Putting Teachers in Charge

Teachers at the Upper Primary division of the HKIS felt they were inundated by the demands placed upon them by their students, parents, administrators, and subject-area specialists. Rather than letting teachers drown in these demands, school administrators put teachers at the center of the curriculum-development process. They designed a system that harnessed the talents and time of various stakeholders through a carefully orchestrated collaborative process.

Teachers, learning specialists, and administrators comprised the Collaboration Team based on the idea that everyone should participate and "own" the curriculum. This learning community approach, with designated classroom teacher leaders representing their grade-level teammates, put the teachers in charge of the process. Also, from the outset, it put them in conversation with the instructional technologist, the library media specialist, and the gifted-and-talented coordinator.

The inclusion of the instructional technologist and library media specialist as partners on the Collaboration Team dynamically moved the process to focus on 21st-century skill adoption. Because these two specialists serve all grade levels, their perspective on next-step skills needs was invaluable to the classroom teachers, whose focus was naturally more grade specific. Their input and leadership regarding instructional design and adoption of the NETS and ALA standards led to seamless integration of information and communication literacy (ICL) skills into the social studies and science units of study.

Administrators and the curriculum director facilitated efficient, collaborative discussions that focused on a few standards and essential questions, making the assessments uniform and providing options for differentiation, many of which were possible with the technology support. Having so many perspectives helped eliminate redundancies as well as build upon students' skills sequentially.

Getting Started

By zeroing in at the start just on the social studies and science units, with reading and writing to come later, the teachers gave themselves a manageable task. Deciding not to take on too much at one time naturally led to more buy-in. By giving teachers classroom coverage for the half- and full-day meetings, the school principal validated the process while avoiding the usual rushed-through after-school meetings.

A second driver for ICL integration involved the use of a versatile online curriculum-mapping tool that contained a unit-planning template. That template is structured to prompt users to add specific instructional strategies and assessments enhanced by technology use.

Much thought went into designing the unit-planning template, as it also guided the Collaboration Team to differentiate the content, process, and student learning products.

The template design originated from the Understanding by Design (UbD) sample templates provided by Jay McTighe and Grant Wiggins in their *Understanding by Design Professional Development Workbook*. In the case of the HKIS, the online curriculum-mapping tool is one part of the myDragonNet virtual learning environment that also provides a classroom management system as well as electronic portfolios for students and teachers. (See *L&L*, "Breathing Fire into Web 2.0" by Justin Hardman and David Carpenter, February 2007.)

In their annual review of the process, collaboration teams base their discussions on the success of past assessments (Did students learn what we intended for them to learn?) and comment on how the essential questions, instructional strategies, and assessments often needed further refinement and crafting. New teachers are brought into the process to benefit from the talents and ideas they contribute while orienting them to the curriculum that's been adopted.

KEY ELEMENTS OF THE NEW CURRICULUM PROCESS

- Best practices for instructing 21st-century students in a standards-based school
- Assessment-driven curriculum improvement
- Differentiation for gifted as well as struggling students and various learning styles
- Integrated technology and information literacy skills
- Curricular decision-making documentation to meet the needs of various audiences (especially teachers new to the school, administrators, parents, and students)
- Expansion of the Collaboration Team to include learning support, ESL, and other specialists to further design the curriculum to meet the needs of all students

Working Together

The instructional technologist and library media specialist were already versed in the unit goals because they were on the Collaboration Team and helped to write the instructional materials. That made it easy for them to codesign the lessons they delivered to the students to support the science and social studies units.

The impact of integration and collaboration was immediate, grade-wide, and articulated from grade level to grade level:

- Third-graders enjoyed a "Buddha-Quest" designed by the librarian

to explore Internet-based sound-recordings, images, and text about Buddhism while also learning terms associated with using the Internet (e.g., URL, menu, browser window, server). The instructional technologist supported this short inquiry project on Buddhism by teaching the third graders how to use Inspiration. Students were able to record and pursue their individual questions, capture images, credit sources, and paraphrase findings through their mind maps. Classroom teachers used the tool to pose probing questions based on individual webs.

- For their nutrition unit, fourth graders shared and compared recordings of their eating habits by adding daily to a class wiki in their Moodle course sites. The development of library lessons on asking good research questions, note-taking, using subscription databases, and citing sources tied directly to the fourth grade's essential questions.
- For fifth grade inquiry projects, the WebQuests that were developed integrated the next stage of ICL instruction. Teachers reinforced prior skills instruction and added the next layer—Web site evaluation and visual literacy lessons—as they shot and incorporated meaning-making images into their photo essays.

For these units, the librarian and literacy coordinator purchased and recommended book sets for "leveled reading" in classroom readers' workshops.

Thanks to the improved understanding of assessments, the media specialist was able to supply resource teachers with DVDs to scaffold instruction to their charges.

The gifted-and-talented instructor conducted pull-out literature circles on advanced-reader novels that directly supported the themes and essential questions explored by all students at grade level. Thus, those gifted students received enhanced work rather than just

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more work. These are a few examples of the ways that the improved curriculum-writing process integrated the efforts of specialists to improve instruction, co-teach lessons, develop and purchase resources, design assessments, and enhance students' learning in all classes across all grade levels.

Learning Alongside Students

On another level, classroom teachers learned new technology and information literacy skills alongside their students. Teachers became emboldened to ask, "Where else can we employ new technology for more dynamic learning?" It didn't take long before teachers began to improve and adapt the integrated technology to new learning situations. Fourth and fifth grade teachers were eager to use video cameras, Photo Story, Inspiration, Moodle, and other tools because their students were already familiar with them. They saved class time because they didn't have to teach students how to use the technology.

Here are some examples of how teachers adapted their lessons:

Podcasts. Using Audacity to create podcasts for end-of-unit social studies assessments gave Ben Hart, a grade three-four combo teacher, the idea to use the same technology to have his students record reflections from their writing conferences. Hart prompts his students to record their thoughts about how they are improving their use of the writing process, what they are working on as writers, and the next steps they plan to take. It provides him with instant feedback as he listens to the sound files from the writing conferences.

Mind maps. David Navis, a fifth grade teacher, has expanded upon how Inspiration mind maps are integrated into the social studies and science units of previous grades. Students are provided a mind map template with the essential questions for the vari-

ous units. They start the units with a pre-assessment and respond to the essential questions by adding new concept bubbles to demonstrate their expanding understanding. As the school emphasizes inquiry, the students add any questions that come to mind in the "parking lot" section of the mind maps. As the units progress, students continue their reflection to further develop their responses to the questions.

Navis has students use set colors for their new concept bubbles at each

stage of reflection (blue symbols for the start of the unit, gray for the middle, green for the end of the unit) to push the process to deeper student reflection and learning. Navis says, "Once the diagram is complete, I switch to outline form on the class projector using an example from one of my students with his/her permission. It becomes very evident how their

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thinking and knowledge has expanded. The next step is to have them write an essay from the outline."

Multimedia presentations. With all of the students doing research for a Civil War Unit common assessment, Gene Cheh, a fifth grade teacher, did his own exploration and multimedia creation expanding upon the initial information literacy research skills integrated into the unit. Cheh used Flash to construct a slideshow of primary-source posters for the students to interpret using visual and information literacy skills. Gene used clickable "hot spots" on the poster images that provided probing questions for his students' reflection.

Reflecting on the Process

The final stage of the curriculum-review model is the end-of-unit reflection meeting, which has multiple purposes: sharing and reviewing student assessments, selecting and uploading to the curriculum-mapping tool the exemplars to serve future instruction, ensuring reflection on what did and didn't work, and ensuring accountability. Administrators working as instructional leaders furnish vital support to these meetings as they use guiding questions to draw out suggestions that will help improve the units in the future. Changes to the unit plan are noted immediately in the myDragonNet curriculum-mapping tool.

Making It Happen

Whether you are taking the first steps to infuse more technology use into your school's classrooms or are planning a major shift in the culture of your school, take a look at how systematic and healthy your

curriculum-review process is. If your curriculum-development system is not driving how you do business at your school, think about what steps and stakeholders need to be involved to redesign and then participate in creating, sequencing, communicating, and assessing your curriculum. A vital question is: How well are you avoiding redundancy and providing for growth from one grade level to the next? Integrating the NETS and ALA standards is just the first step as teachers apply technology and information-skills instruction across the curriculum. The ripple effect for introducing 21st-century learning opportunities can become an unstoppable force in your school's learning community.

Resources

"Breathing Fire into Web 2.0," Justin Hardman and David Carpenter, *L&L*, (February 2007)
David Carpenter's blog, Lessons Learned: <http://lessonslearned.edublogs.org/>
MyDragonNet, www.slideshare.net/jaharman/mydragonnet-learning-platformpart-12/
Understanding by Design Professional Development Workbook, Jay McTighe and Grant Wiggins, Association for Supervision & Curriculum Development (2004)

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