

HORACE

When the same principles guide a student's school experience from kindergarten through high school and beyond, the habits of learning take a far deeper hold. But this entails teachers, parents, and administrators working and talking together on every subject and at every step.

BY KATHLEEN CUSHMAN

Essential School Pathways: Connecting Across the Grades

A HELIUM BALLOON PROJECT from Kristin Munro-Leighton's fourth-grade year at Louisville's Brown School has kept floating into her school experience again and again over the six years since. It started when a visiting naturalist explained the damage to Earth's atmosphere when balloons go free, prompting Kristin and her classmates to lobby successfully for a city ordinance against the practice. In eighth grade, the same students tried and failed to get their balloon bill onto a crowded state legislative agenda. Later still, when a local bar advertised a mass release of green balloons to celebrate St. Patrick's Day, the young activists called the city and the bar manager to protest.

Like most innovations in education, when looked at plainly Kristin's experience seems only common sense. If students go to the same small school for twelve years in a row, their learning is bound to grow richer and deeper along the way. Without much fuss on anybody's part, the knowledge and understanding they gain in elementary school will inform their work in the middle and upper grades. Teachers will talk together often and waste less time on redundant or remedial instruction. Individual learning styles will reveal themselves early and flower as the years go by. Adults and children will come to know each other well.

But although Kristin goes to a

public school where things like this happen as a matter of course, in most of America the idea of following a child from kindergarten through high school has gone the way of the one-room schoolhouse. In the sprawling fiefdoms of contemporary school districts, for an elementary teacher to sit down and talk shop with a high school teacher is as rare as a field trip to the Serengeti.

But this commonsense idea has gained new credence and momentum as Essential schools explore ways to deepen both intellectual and personal connections across a student's career. By forging coherent "pathways" through the bureaucratic tangle of schools thus far organized chiefly by age and geography, forward-looking educators hope to infuse entire systems with continuity—in curriculum, in conversation, and in what the schools most value.

Articulating the Joints

"Habits root early," TheodoreSizer has observed. And though he first conceived the Coalition as a secondary school reform movement, "Many of the 'new' Coalition ideas," he notes, "were in fact ones long associated with progressive elementary school practice."

A former kindergarten teacher herself and now one of Essential schools' most noted figures, Deborah Meier likens the Nine

What Is a School Pathway?

The school pathway creates a personalized learning environment that spans a student's educational career. One high school and all (or a selected group) of the schools that feed into it, from pre-school on, form an academic community that works together to set standards and establish guidelines for coherent teaching, learning, and assessment across the pathway. Teachers across the pathway know each other, their students, and their families well and work hard to build a community that is united across schools and grade levels. Teachers and administrators share responsibility for the students they all work with. Principals act as instructional leaders, facilitating this work in their schools and collaborating with each other as a united team.

—From the *ATLAS Communities Design Summary*

Common Principles to what goes on in most good kindergartens.

"Interesting things are available to investigate," she notes. "Youngsters are expected to collaborate as they learn; learning and doing go hand in hand; teachers know kids and their families well, and learn about their kids by watching and observing, intervening and coaching."

Ted Sizer's conviction that high school teachers should be generalists (as well as specialists) found ready illustration in the best elementary classrooms. The early grades' developmental and constructivist approach, in which students construct knowledge from their concrete experiences over time, made sense at higher grade levels as well. Meanwhile, middle schools across the nation began to show good results from innovative practices (like teaming and a more integrated approach to curriculum) that mirrored Essential School principles. The need became more obvious for a smoother articulation of schooling's traditional "joints"—the moves from elementary to middle to high school.

Some Essential high schools (like Boston's Fenway Middle College and New York's University Heights) began to admit students in younger grades so they would have more time to develop the habits they aimed for. Some school districts, such as the Croton-Harmon district in New York's Hudson River Valley, initiated system-wide professional development for teachers across all

grade levels. And in three test sites funded by the New American Schools Development Corporation (NASDC), the consortium known as ATLAS bent its efforts toward creating a national model of the kindergarten through twelfth grade pathway.

One School As a Pathway

The case for pathways shows most vividly in whole-school examples like Louisville's Brown School, designed in the early 1970s to create a continuous educational experience for some 600 urban students from pre-school through commencement. Few structural impediments prevent Brown teachers from thinking of the curriculum as a spiral forming an uninterrupted flow in a child's education, introducing and reinforcing intellectual habits again and again.

"Right from the start we encourage kids to use writing to have an impact on the community," says principal Lenora Hay. "We also stress experiential education all the way up—even our first graders go camping and rafting together." As in Kristin's balloon project, curricular strands weave through the school's mixed-grade classes at many levels. A middle school science and social studies project exploring pollution in a local tributary of the Ohio River, for instance, not only resulted in eighth graders publishing a book on the subject, but has evolved into an ongoing science study in grades nine and ten.

Having younger children in the same building, says humanities teacher Sue Vislisel, provides rich learning opportunities for her high school students. "I have one senior with a learning disability who is sitting in on elementary and middle-school classes gathering data on how left-handedness affects kids' behavior as they develop," she says. "Even though she has difficulty with written text, her work is much deeper because she can make these observations." Other students coach youngsters in academics and sports. "Kids gain a real sense of responsibility for the behavior they model," Vislisel says. "We use the word 'family' a lot to describe our relationships in this school."

Conversations with other teachers at both higher and lower grade levels help him design more effective curriculum for his fifth and sixth grade classes, notes Brown's Bill Munro-Leighton: "My team has had some very good conversations with the high school math and science teachers, addressing holes they see



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in what the kids are learning." And because writing is assessed in portfolios at fourth, eighth, and twelfth grades, Munro-Leighton's students arrive already familiar with the rubric they will practice for the next several years. "The idea that writing is part of every subject is now continued at every level," he says.

Though most Brown School students attend from their earliest grades, some arrive mid-career from other schools. "I have to say it's rare that I'll call a teacher from another school to get information about a student's past experiences," Munro-Leighton says. "But I regularly ask the elementary teachers here about kids or curriculum. It's good for the kids, too—they know more of what to expect as they move up to the next level."

In fact, Lenora Hay hypothesizes that this K-8 continuity in developing habits of mind underlies Brown middle school's high scores on Kentucky's new performance assessments. "In contrast to the middle school, as many as a quarter of our ninth graders are new," she says. "We are analyzing the data closely to see if that leads to high school scores dropping."

Urban Networks

Sane though Brown's model may be, few urban schools enjoy the luxury of sanity. Instead, they segregate kids by age in separate schools where teachers rarely have time to talk to each other, much less to their district colleagues across town or down the block. Even if site-based management sidesteps central office policymakers, few schools make pathways from one level to the next their top priority.

New York's recent flush of restructuring, however, has taken on that challenge with new energy. Supported by the Center for Collaborative Education, a network of 27 Essential schools in New York City, more schools have decided to create smaller networks of their own. Linked by common themes,

'What kind of links can we forge so students don't come up with such wide variations in their preparation?'

geography, or purpose, three to six schools visit and share resources with each other, reflect together on classroom practice, and serve as "critical friends." Though the grade linkages sometimes don't quite meet at the seams, ideally students also move up from school to school through the network, finding common values and old friends awaiting them.

A focus on service learning, for instance, links the new midtown high school known as the Coalition School for Social Change with four partners in a network. Among them are two other new high schools: Landmark High School (which shares the same school building with Social Change) and Manhattan Village Academy, a couple of sub-

way stops away. A bit too far uptown for easy access lies the Community Service Academy, serving grades six through eight; and near that school lies Muscota New School, with kindergartners through eighth graders.

"We made the original link by asking Service Learning Academy to come help both Landmark and Social Change, because we wanted to make service a graduation requirement," says Charlene Jordan, who directs the Coalition School for Social Change. "But as soon as teachers got together, they also found strong links between our humanities programs. We have so much to learn from these elementary and middle schools—not only about how to become generalists, but about what kind of links we can forge so students don't come up with such wide variations in their preparation."

The sixth through eighth graders at Community Service Academy had already integrated community service into their academic day, primarily through peer tutoring, reading groups, and such

How Can Pathways Move Innovation Into the Mainstream?

In a working paper from the ATLAS project's offices in Newton, Massachusetts, Linda Gerstle offers these observations on how K-12 pathways can enhance conditions for meaningful innovation:

- They generate consensus on a common philosophy of teaching and learning that transcends grade levels.
- They establish a district vision of what is possible and desired as student outcomes.
- They coordinate community assets and resources that contribute to student development and success.
- They build district-wide coherence and focus within multiple tracks of reform.
- They provide opportunities to communicate within and across grade levels.
- They create the supports (that is, planning and professional development) to facilitate better transitions between grade levels.
- They help in rethinking district policies that affect teaching and learning to provide support for school-level reformers.

Elementary Schools Form Networks for Change

The National Elementary School Networks (NESN) began in the spring of 1993 when educators and parents from 18 states gathered in New York to consider how Essential School principles relate to elementary schools. Another key goal: to form local and regional school-based "networks" through which to collaborate in reform efforts. With support from the DeWitt Wallace-Reader's Digest Fund, in 1994 the project helped launch six of these school-based centers across the country, and others are forming fast.

What do the elementary school networks do?

- Both locally and in a national Networking Institute, they bring together groups of like-minded school people (teachers, parents, and administrators) to collaborate on key reform issues.
- They communicate electronically via Elementary Online, which uses the Internet to conduct a conversation with parents and educators anywhere in the country.
- They use the same "logs" as tools for self-assessment and reflection.
- They build school-based centers for change, staffed and managed by the people most directly affected by reforms.

As an emerging theme for the school-based centers, NESN has proposed that each concentrate on developing four "underlying cultures"—the cultures of debate, of vulnerability, of differences, and of collaboration. A rich conversation about how Essential School principles play out in different contexts has already begun to evolve, including the slight revision of the Nine Common Principles to reflect elementary school perspectives.

School-based elementary school networks funded by NESN now exist in Arizona, Indiana, New Mexico, Milwaukee, Colorado, and Ohio; and other such clusters are taking root in Westchester County, New York; Los Angeles; southeast New England; and Broward County, Florida. School communities engaged with Essential School principles in the early grade levels may contact NESN at 212-348-7821 for more information.

activities with youngsters at nearby Muscota Elementary. They also provide day nursery services at a local welfare center; and their follow-up activities in school, Jordan says, modeled how high schools like hers might also use service as a prompt for academic learning.

"We have a hard time actually getting the middle school kids down here to work with our kids," she acknowledges. "You lose a lot of time in travel, and they can't do it on their own." Still, the high schools do host after-school sessions for parents and students, hoping to draw enrollments from network partners. "We'll have 16 of these kids joining us in September, and we've only been at this a few months," Jordan says. "If that also happens at Landmark and Manhattan Village, you're talking about a very strong network."

Jordan and her network partners are quite aware that people are watching their innovative schools for evidence of progress. "In curriculum, we're looking together at what areas kids are having trouble with, so we can spend more time on them in high school," she says. "And we try to make sure our graduation portfolios and requirements really mean what we want them to."

One key to structuring a useful network, Jordan remarks, is that its leaders collaborate on solutions to their common problems. "Being able to call another principal who shares the same concerns and ask how they are handling something is a tremendous help," she says with feeling.

Urban areas with unusually transient populations find another advantage to linking schools in pathways: students who transfer

may face less disjunction in their new schools' approaches. In Los Angeles, clusters of urban schools linked in reform by the new Annenberg project will use K-12 pathways as a major organizing factor. And in sprawling Broward County, Florida, where 47 schools at all grade levels are engaging the Nine Common Principles through a variety of means, the district created networks dubbed "Innovation Zones" that link several feeder elementary schools with a larger middle and high school.

Coral Springs Middle School, for example, belongs to an Innovation Zone that has focused since fall 1994 on educating the entire school community about different learning styles. Cadres of teachers across schools and grade levels formed support groups to practice, plan, and try out classroom strategies that fostered "personalized high-option learning environments." The five schools launched a joint effort to upgrade their technology and use it in ways that support individual learning styles. All the schools focused on performance tasks and portfolios as important ways of assessing student work. Parents were invited to learn about Howard Gardner's theory of "multiple intelligences," and to create new connections between school, home, and workplace.

The Shoulders of ATLAS

Another enormous school district, Prince George's County in Maryland, has been trying out many of these same techniques as one of three pilot districts in the ATLAS Communities project, funded by the New American Schools Development Corporation (NASDC) and jointly developed by the Coalition of Essential Schools, Harvard University's Project Zero, Yale's School Development Program, and Education Development Center. ATLAS communities agree on five common principles of teaching and learning; they emphasize the K-12

pathway as the means to a "unified community of adults" that supports authentic teaching, learning, and assessment for all students. This year the project is scaling up to include up to eleven new jurisdictions from coast to coast.

After a year's work devising system-wide structures to support reform, Prince George's County site liaison person Elsa Wasserman says she is convinced that no matter how solid the design, "you can't zip through this stuff." Success will depend, Wasserman says, on "good will, motivation, and the willingness of people in schools to make the best use of their time."

If a pathway achieves that, no end of possibilities present themselves. The Prince George's ATLAS community sponsors a continuous "pathway bus" on which, for instance, middle school kids can travel to take high school math courses or parents can hop from one teacher conference to another in a different school. Schools get waivers together from district requirements that thwart the pathway's approach;

In the informal as well as the formal curriculum, cross-school action works to nurture habits and dispositions.

technology purchases and training can be coordinated.

In the informal as well as the formal curriculum, cross-school action works, Wasserman observes. Last year, for example, the five ATLAS schools in Prince George's County brought together a community health team and opened a walk-in counseling clinic for any parent or student in the pathway. Teachers and counselors talking across schools ease the transitions from elementary to middle and high school. A pathway group of parents and teachers has even begun working out a strategy to keep kids of all ages from skipping school to go to house parties, once thought to be a

high school problem exclusively.

Likewise, if schools want to encourage skills or habits like democratic governance, they can coordinate their strategies across grade levels. "Kids start in the early grades with circle conversations, making sure everyone gets heard," Wasserman says. "In middle school they're doing persuasive papers; and by high school they're doing translation for parents, serving on school councils, talking about things that affect the community."

The whole of Gorham, Maine's school district is smaller than one Prince George's County high school, but it too is an ATLAS community, in which one pathway comprises all of its six schools. Kindergarten students share one site, and there are two primary schools (grades 1 to 3), one elementary school (4 to 6), a middle school (7 and 8), and a high school. Gorham has poured its efforts into "finding time and means to bring together teachers from kindergarten through twelfth grade with a common purpose," says site coordinator Margaret Evans.

Pathway Summer: Teachers Try Out New Practices Across the Grades

To get teachers across the district thinking in new ways whatever their grade level or discipline, the Gorham ATLAS community brought 36 of them from six schools together in a Summer Institute last year. One hundred thirty-five students from kindergarten through grade eleven attended the Institute every morning for two weeks; assigned to one of nine multi-age groups, they provided a laboratory for designing and reflecting on new ways of teaching and learning across a pathway.

During five days of planning set aside from late May to early July, teachers met with an ATLAS coach and with their "site developers," or school coaches, to plan and prepare for the student sessions. Their groups included both elementary and secondary teachers, guidance and special education staff, and a music teacher, as well as several assistants and administrators.

Once the Institute began, each morning began with an hour of preparation and planning. From nine to twelve, teachers worked in teams with students who spanned three or four grade levels, on projects that explored the theme of community in different ways. Some groups explored the community of

animals living in and around a tree; others investigated ant life, or worked on a historical perspective of the Gorham community. Several groups took on community service projects: creating field guides to the school-yard environment; cleaning the railroad brook and creating a nature area; helping students new to Gorham; planting flowers around a local monument. Each group prepared a culminating product or performance to present in final exhibitions for fellow students and families.

Every afternoon, teachers came together again for three hours of collaboration and reflection. In the context of their morning's work they practiced team-building; they worked on assessment design and portfolio development; they developed new ways of involving and communicating with parents and community members. The school coaches practiced their facilitation skills. Teacher leadership and supportive reflection provided a constant theme.

The school year began in the fall with a workshop in which the Summer Institute teachers shared their work with the entire district staff—the first, they observed, of many pathway meetings that would continue to build their emerging skills all year.

To that end, ATLAS in Gorham organized K-12 "design teams" of parents, teachers, and students who carve out areas like "Standards, Outcomes, and Exhibitions" for study and planning. There is a design team for curriculum, instruction, and assessment and one for "reporting systems"; a curricular area committee ties them all together across the disciplines.

The way Gorham assesses its students provides a good example of how these teams connect the pathway in all kinds of practical ways. As students leave each level, they now complete exit exhibitions designed by teachers working across the levels. "Both third and fourth grade teachers helped make up the third grade exhibitions, for instance," says Evans. At every level, each exhibition contains two of the pathway's "compulsory" demonstrations of such key skills as writing, data analysis, oral presentation, and illustration and diagramming.

"A whole bevy of parents, community members, and teachers from everywhere," says Evans, came to witness and give feedback on the exhibitions; for some grades the audience also used scoring rubrics. Later, teachers gathered—first in district-wide grade-level groups, then across the grades—to share their reflections on how the exhibitions went.

Launching the portfolio assessment process that will track student work from kindergarten through graduation became another pathway task. The Reporting Systems design team recommended a framework for all portfolios. Using a common rubric prepared by the curricular area committee, parents and teachers from the Standards, Outcomes, and Exhibitions design team sat down for two days this spring and scored writing samples from third through eleventh graders. "We're trying to develop a common language that teachers, students, and parents all use throughout their years here," Evans says.

The Curriculum Spiral

A small district in New York's Hudson Valley provides another model of how curriculum and teaching can change when people start talking to each other up and down the pathway. "I first envisioned this happening more in the particulars of the curriculum," says Superintendent Sherry King. "But what's developed has been a system-wide focus on habits of mind, dispositions, and

students as reflective practitioners in their own right."

At a system-wide K-12 professional development day two years ago, King recalls, a group of kindergarten teachers announced that their current class would be the first to graduate from Croton-Harmon High School—in the year 2006—with portfolios of their work from start to finish. Working with the Coalition through a grant from IBM,

One District's Pathway: Portfolio Assessment Across the Grades

The Croton-Harmon school district in Croton-on-Hudson, New York found portfolio assessment to be a useful way to tie together curriculum and instruction across its elementary school, middle school, and high school. The following diagram outlines the projects portrayed in each student's "digital portfolio"; the categories in bold indicate areas emphasized throughout every level.

THE HIGH SCHOOL PORTFOLIO (GRADES 9-11)

Skills:	Content Areas:
Problem Solving	Math / Science / Technology
Research	English / Social Studies / Foreign Language
Communication	Fine Arts / English / Foreign Language
Self-Assessment	

THE MIDDLE SCHOOL PORTFOLIO (GRADES 6-8)

Content:	Themes connected to Ernest Boyer commonalities
Skills:	
Problem Solving	
Written Expression	◀communication▶ Take & Support a Position
Research a Topic	
Observation	
Response to Printed Text	
Artistic/Kinesthetic Performance	

THE ELEMENTARY SCHOOL PORTFOLIOS (GRADES K-2, 3-5)

Academics	
Language Arts (communication)	
Math (problem solving)	
Science	
Social Studies (research)	
Arts	
Social	
Self-Assessment	

the district is developing these portfolios in electronic form; they are intended to richly document students' progress in communication, problem solving, research skills, and self-assessment. From the earliest grades teachers follow these emerging skills, and students themselves reflect on them; and already Croton-Harmon's teachers have begun to notice a change in the academic weather.

"We began to realize that we do things as teachers that have real importance as kids move through the district," says high school math teacher Frank Arcuri, who with his colleague Mike Doehring sat down with every math teacher in the district to ask 25 questions about what they taught, when, and how. "The answers really opened our eyes; it absolutely shaped how we continue to develop our high school curriculum."

For one thing, Arcuri notes, few math teachers at his level were used to grading the kind of mathematical writing that the new math standards call for. Since then middle school teachers have met often in joint sessions with their elementary and high school colleagues, used a common rubric to evaluate students' writing in math, and agreed to mutual standards for good work.

In writing, changing practices at lower grade levels have also raised expectations farther up the pathway. "Once fourth graders get in the habit of reflecting on their writing," Sherry King observes, "secondary teachers have room to ask deeper questions of them later on." As they leave elementary school, students are asked to select and defend their "best work" for the portfolio. "Now teachers up the ladder have begun to explore the tension among different perspectives on what characterizes best work," says King. "That very rich question would never have come up if different levels hadn't been sharing this conversation."

In science, Croton-Harmon is developing a sturdy problem-based approach in which content and

A 'System Map' Lays Out a Pathway's Action Plan

The Croton-Harmon school district belongs to New York's Compact for Learning, a group of innovative schools that share common goals reflecting Essential School principles. To chart progress toward these goals up and down the pathway, Superintendent Sherry King devised a "system map" whose columns tracked the ways in which local initiatives (both current and planned), data, and the district's decisions and actions supported each of the common principles. Here is a section excerpted from that chart:

Principles	Local Initiatives	Planning	Data	Decisions & Actions
All children can learn.	Mainstreaming, initiated 1989, Revisited at Board work session, fall 1992.	Problem-solving approaches	Student achievement	How we use data to improve student learning
[Essential School principles:]				
All students will learn to use their minds well.	Inclusion, initiated 1991, 5 students to date (1/2 yr.)			
Goals of the school should apply to all.	Extended Learning Program			
Student as worker.	Socratic Seminars			
Personalized teaching & learning.	Math Their Way			

developing skills spiral upward, including relevant material from other disciplines as questions unfold. "In the past we would present information on a given topic and children would memorize but not understand it," says science educator Mary Jo Diem, who has been working with the district on the new strategy. "Now we are giving students the tools—everything from the scientific method to the system of measurement—to match the inquiry skills we are trying to teach."

That involves adapting the curriculum downward from the upper grades, Diem observes. "If you want students to do a serious genetics unit by eleventh grade, they need to start as early as kindergarten by observing the properties of matter. In fifth or sixth grade they'll be real-

izing that matter is made of particles, and how those particles affect our lives in the genetic forms. As they move up to things like DNA and electrophoresis their questions will become more sophisticated, and at that point, if they are doing problem-based learning, they can go research the information they need. But from the start they need the basic skills and methods that enable them to formulate their own questions and develop ways to answer them."

One Pathway, Many Steps

In the chaotic landscape of American school reform, the logic of creating K-12 pathways seems virtually inarguable. Still, U.S. schools rest on a long tradition of local autonomy—contradicted in practice by the stranglehold of testmakers and text-

book publishers but venerable nonetheless. Do individual schools stand to lose such control if pathways too closely dictate the educational steps they take?

"ATLAS principles are broad enough that they become transformed by the particular circumstances of [each individual] school," argues Linda Gerstle. School people networking within mammoth districts like New York City's, moreover, say they find solace, not stricture, in identifying and working with a few like-minded schools that support each other across time. Finally, given the realities of district politics, a working pathway can supply a forum in which cross-interests may reach consensus on policy directions before the recommendations enter the political arena.

Pathways also create a high level of accountability, without resorting to the kind of national controls over curriculum and assessment that many Essential schools resist. A thoughtfully designed pathway provides the members of its community ongoing chances to

Faced with expensive remediation, many states now extend the pathway concept four more years through "grade 16," or college graduation.

survey actual student work over time and across many domains. If things are going wrong, everyone will know it, and together they can figure out how to improve things before the cost of remediation gets too high.

In fact, among those calling most loudly for coherent educational pathways are the colleges and universities that must deal with the graduates of the current fractured system. Ninety percent of four-year colleges now offer remedial instruction, according to *Education Week*, and nearly a third of the nation's college students took a remedial course in 1989, the last year in which

data are available from the National Center for Education Statistics.

Faced with this depressing and expensive picture, quite a few states have moved to extend the pathway concept four more years through "grade 16," or college graduation. The university systems of New York, California, New Mexico, Oregon, Tennessee, Wisconsin, and others are working closely with their state education departments to align the outcomes of a public high school education with the capabilities they hope for in entering students.

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While left-brainers argue for the pathway concept on the grounds of efficiency, economy, and accountability, right-brainers praise it for bringing bureaucracy down to size and involving more people personally in how we educate our children. It echoes the oldest notions of community and democracy, and it doesn't even seem to cost much. So why is this notion called an innovation, and why don't more school systems do it? You tell me. □



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