
Bellevue School District

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Chapter 7

Bellevue School District

What Is This a Case Of?

- The evolution of a successful district effort in technology and staff development.
- Site-based planning, resource allocation, and staff development, for a program that builds from the bottom up and is supported from the top down. As John Newsom notes, “If you build a fire in the basement, it will eventually reach the roof.”
- Staff development for technology as inseparable from the district’s technology program. The people in the building are the ones who provide the training, serve as models, and plan for the further incorporation of technology in the school.
- A widely shared philosophy about children and learning that permeates all of the staff and the actions they take in the schools, including the technology program.

District Context

Bellevue, as a community, has grown from an upper and upper middle class suburb of Seattle to become the fourth largest city in the state of Washington. It is no longer a suburb, but a first ring city, larger than Portland, Oregon, in assessed valuation as a result of newly built office space and moderately-priced apartments. With jobs, affordable housing, and a strong school system, the community has attracted single-parent families, immigrant families, and families with lower incomes looking for a better life. The children of the people who built the large homes in the hills and on the lake are now grown. New children, often with characteristics that resemble those at-risk of school failure are showing up in schools: more children of color, more children who don’t speak English at home, more children receiving free and reduced-cost lunches. The district enrollment has been steady, around 15,000. Racial diversity is more apparent: 76 percent of the students are white; another 17 percent are Asian, with the remainder split between African-Americans and Hispanic-Americans. In elementary schools, twenty percent of the students receive a free or reduced-cost lunch; meals are also subsidized for sixteen percent of the middle school students and ten percent of the high school population. The graduation rate is about 75 percent.

Bellevue’s neighborhoods are changing, too. There is more fear of crime; parents in certain neighborhoods are concerned for the safety of their children who wait at the curb for the school bus. In the neighborhoods of more established families, property owners are also concerned about the changing patterns of school populations. They react to what they perceive as the increasing presence of less capable children, and a concern that more of the district’s dollars are being spent on these newcomers than on their children.

Bellevue's Schools

The school system has a long history of being on the cutting edge of educational change. For more than 30 years, Bellevue has been among the leaders in creating new visions of innovative and dynamic schools. They have been able to attract leaders in curriculum reform as teachers and administrators— many of their current staff serve on national curriculum committees. The years of being free to try new ideas were made possible by the nature of their student body. (Several administrators noted that, “You could have done anything with these kids and the test scores wouldn’t change.”) Now, test scores are beginning to look more like those in cities, gradually declining, a result of the influx of new students less well prepared to meet the standards set by earlier generations.

Bellevue school district has held its community’s support in the past because it had been successful. It has been able to explore innovative curriculum and instruction, try new management approaches and acquire technology. But with this recent growth and community development came changes in the nature of Bellevue’s schools. Now, they need to be successful with a different student populations. In a union survey of teachers, taken last school year, 93 percent of the teachers agreed with the statement that “Changes in the student population demand changes in the educational system.”

School levies are still passing with super majorities, but the votes are getting tougher. In a recent election the anti-tax sentiment in the state led to the defeat of several school levies. They failed because most people at the district assumed it would pass and no one went out to scare up the vote. A survey showed that voter apathy was the problem, not a desire to hurt the school. A second election passed with a 70 percent majority. Supporters of technology on the board and in the community are now asking “does it make a difference?” But as the superintendent notes, “It is hard to get parents to understand that their children are learning differently — not learning different things, but going through a different learning process.” Technology and other new initiatives in pedagogy and curriculum are still engaging teachers and challenging them. But, as in school districts around the nation, many parents prefer a more traditional approach to innovation.

There are 28 schools in the Bellevue district, including three alternative schools, run by a teaching staff of about 850. The individual schools have had substantial autonomy for quite a while; site-based management is nothing new in Bellevue. Since the mid eighties, schools have had site councils (or program delivery councils) that include teachers, the principal, and parents. At the high schools, students also participate on the councils. This group is responsible for all the critical decisions at the site, including hiring, budget allocations, and the instructional program. As a result, each school approached technology for teaching and learning somewhat differently.

Introducing Technology

The district’s technology program started more than a dozen years ago, when the School Board adopted a set of objectives for computer education. During the 1980’s, students used computers, often in a laboratory setting, to do simulations, work on problem solving software, and learn to use computer tools. The philosophy behind the technology program remained constant — and consistent with the district’s overall vision: empowering learners and teachers by “providing them with real-world tools to do meaningful work, and restructuring the classroom so that all learners can succeed.” Teachers’ adoption of technology was voluntary, with clearly stated principles for use and training provided to all who sought it. The presence of computers and other technology in schools grew gradually

over the years, until the Integrated Technology Classroom (ITC) began to shift the focus from computer labs to the integration of technology in the classroom, where the tools could be accessible throughout the instructional day.

Few of the district's teachers were involved with technology on a day-to-day basis, but a small group of technology enthusiasts — all elementary teachers — wanted to integrate technology into the classroom in a serious way, rather than send students to the lab. In 1987, they prepared a grant proposal to Apple Computer, to develop a model, technology-rich classroom in two schools as a place for others to learn from and gradually adopt technology for instruction. The goals were to “create and disseminate effective models for using technology for student learning and teacher instruction.” Apple turned down the proposal for equipment, but the district felt that the ideas were sound and funded it.

Under a pilot program in a several elementary classrooms, teachers were given a range of technologies to use for instruction. Over time, a small cadre of technology teachers surfaced in schools, talked with one another about how to successfully and productively integrate the various computers and cameras and videodiscs into their instruction, and provided a series of open workshops for other teachers in the community. Part infiltration and part subversion, part modeling and part persuasion, and part mere presence — these Integrated Technology Classrooms illustrated how new models of instruction could emerge when teachers and students had access to technology and used it for meaningful work within the classroom.

The intent was to change pedagogy by furthering their constructivist philosophy and to provide a rich technology environment in the schools. As John Newsom, the district's coordinator of technology and media remarked, they “learned how hard it was to do. We believed we could get technology into schools in a year or two — how naive we were!”

And as the superintendent notes, “the initial effort in technology paid off. Parents pushed for more (‘get my child in one of those classes’), and now almost everyone wants it. The parents still influence use of the technology in many schools. They wouldn't go back. Moreover, children and parents make demands as they go up the grades. They got it in elementary school, now they want it in middle school. It helps drive the changes.”

Marian Peiffer, the technology curriculum specialist, says, “In the first few ITC classrooms, parents really did drive the growth. Most of ITC classrooms that are effective tend to be multigrade, only a few of them are a single grade. Multi-aging seems to be a key factor in the success, and the reason is just logistics. By the second year at least half the kids are trained in using the various technologies and can teach one another, and the philosophy of using technology is well understood. It takes no time to get started!”

“We were fortunate,” she said, “that the district philosophy and the technology grant were in consonance. We have an approach that is both constructivist and collegial. We use cooperative learning for student instruction and our staff development process uses a cooperative approach, as well. We drive the process for classrooms and build our own history. The district's philosophy is built into the technology plan and it lets everyone know where to begin and where they are going. This approach meant starting with just a few teachers and building the pyramid, working with people who know how to talk to others. We hold very few big events; most of the work gets done within the school building.”

Newsom points out that, “The district's philosophy has been that innovation takes priority over equity.” The limited resources go to support only those who raise their hands, because “they will work 80 hours a week to make it happen.”

There doesn't seem to be a distinction drawn between the district's technology plan and its technology staff development plan. It all seems to be part of the district's philosophy about teaching and learning. The work is collegial and collaborative, the focus is on empowering students not controlling them, and the conclusion is a shift in the approach to teaching, not the learning of technology skills. The emphasis is on site-based planning, implementation of technology, and staff development.

According to the superintendent, "There are many collegial staff development efforts in the district; they are a planned shift in authority, and especially responsibility. The change process follows an old notion, that two people in a building can support each other and encourage the change to take hold."

Integrated Technology Classrooms and Teachers

Bellevue's Integrated Technology classrooms started in 1987 with a few elementary teachers who had demonstrated their enthusiasm for using computers by attending district workshops on Logo and other computer topics. Participation was voluntary and teachers had to sign up to be ITCs with the expectation that they would have to spend substantial amounts of time and work hard to master the technologies. The district media and technology staff made the case that a building's technology budget should not be distributed equally across the entire school staff, but rather concentrated in a single classroom so as to demonstrate the value of computers and other technologies for instruction.

These technology-rich classrooms demonstrated a model of new pedagogy and advanced the district's efforts in project-based instruction and cooperative and collegial learning. The ITC teachers were initially faced with the challenge of making sense of so much hardware in their rooms. They had to develop instructional units to take advantage of their new opportunity, learn to manage a crowded classroom, and teach their students how to use the technology that they were still trying to master. Teachers formed their own support group, talking to each other via e-mail in the evenings using district computers loaned to them for this purpose.

Enthusiasm for the ITC classrooms grew and more elementary schools found themselves with ITC rooms and teachers. ITC classrooms mushroomed from two in 1988 to more than sixty classrooms in elementary and middle schools today. With a five-year levy passed by the community's voters specifically for technology expansion, each succeeding year's technology budget added hardware to the school, and resulted in the need for more staff development. The ITC teachers, each in a different school, worked with colleagues in their buildings to model technology use and help teach about it. The ITC teachers held monthly meetings after school and the rest of the district's teachers were invited to hear of what they were doing. The notion of model technology classrooms moved from demonstration of technology applications to a way to draw people in. Now an ITC classroom in the elementary grades is defined as having six or more computers, TV, video equipment, and other technologies in use for two years or more. The title demands more than the merely the presence of technology; teachers and students must be using it for their central school activities.

Planning and Funding

The success and popularity of ITCs provided the impetus for allocating new funds to support the growth of technology for instruction. Levies for technology passed by the voters made it possible to acquire substantial amounts of hardware for schools. It was easy to justify supporting the ITC teachers with extra equipment for extra the work they were doing,

but distributing large amounts of money to schools required a different rationale and structure. Initially, innovative project funds went for competitive grants to allow some schools to acquire significant amounts of technology or the district itself made large purchases of specific technologies for distribution to all schools.

Recent multiyear funding has permitted the district to put technology into school sites (based on their individual plans, of course). Since 1990, each school receives a basic technology allocation, annually, to be used as the building determines for hardware purchases. Some sites placed the money in a single classroom, creating more ITCs; other schools have built labs or spread the technology throughout the building. The money is not trivial. Elementary schools receive \$25,000, middle schools get \$40,000, and high schools have \$70,000 to spend on technology. Other allocations include funds for innovative applications of technology: \$50,000 to high schools and to middle schools for competitive grants, and \$100,000 for elementary ITC classrooms. Last year, \$70,000 in special large grants went to elementary librarians and arts and music teachers who also wanted access to technologies for instruction.

However, to gain access to technology resources, each building must develop a plan. Often this effort is lead by the technology leader in the building, and a school's technology planning committee usually includes teachers, administrators, students, and parents. Starting with a district-devised template of questions for guidance, each school seeking funds develops a strategy for applying technology in their building, attempting to justify purchases and developing a rationale for staff development and evaluation, and then makes a presentation to a review committee at the district.

I joined the group at a review of a technology plan. A committee of peers — technology task force leaders from other buildings and even other school levels, along with a district leader — reviewed the plan of a high school that had its own committee of teachers from various departments, building administrators, parents and students. The school had sought information from each of the curriculum areas and each had an opportunity to justify its request for hardware and software. The school had an allocation of \$85,000 for the school year, but the initial budget for technology exceeded \$136,000. Thus, input from this district review committee could help identify strategies for stretching the dollars available, or alternatives for listed equipment, or even recommendations for deferring or deleting some purchases.

The review meeting was dynamic and the committee leader encouraged ideas and comments from all; exchanges went both ways with questions to the school presenters, and questions from them to the committee. No area went without observations from the committee, and the school went back to reconsider its choices. Recommendations ranged from not spending money on the arts, since they received a grant last year, to stalling on some purchases until the price went down, to selecting a different computer model with a larger hard drive. Since the plan is an iterative document, and each school gets a technology allocation each year (from a district levy), advice can be fitted to the plan easily. And each plan can also reflect movement towards the school's larger goals for both technology and learning.

The district also has its own repair facility, as part of the media center, and they recycle their computer equipment through the schools. The early adopters are now beginning to get some new equipment, giving the older computers to other classrooms. High schools are encouraged to sell their Apple IIs to the elementary schools at a fixed price. District staff feels that there are good pieces of software for older technology at the elementary level. The planning process at both the district and school sites include expectations of continually updating the stock of computers and other technologies. Each school levy that includes

funds for technology, includes funds for replacing and upgrading the computers in the schools.

BYTE Camp

To portray the range of ideas and concerns that are brought together in the technology staff development efforts Bellevue initiates, BYTE Camp provides an interesting illustration. Frustrated by lack of transfer from Logo workshops to the classroom, Newsom and others thought that student involvement would crystallize the value of technology for classroom learning. They also wanted an opportunity for students who couldn't afford to go to computer camps. Basically another effort to excite teachers and students about technology, BYTE Camp also sustained the district's interest in constructivist approaches to instruction. The Bellevue Youth in Technology Experience Camp (BYTE Camp) was based on Gardner's multiple intelligences and brought adults and students together as learners. The Camp's activities randomly mixed forty teachers with one hundred students from grades 4-8. All participants had opportunities to conduct independent and cooperative tasks using a variety of technologies and encompassing a range of subjects, all correlated to address one or more of seven intelligences. Added to the mix were fourteen high school girls (traditionally under-represented in computer courses) to serve as aides to the ten staff faculty. The girls were funded by Boeing Company, a local business, who later placed them with mentors in the company.

Adult and student learners were grouped and regrouped several times over the two weeks. For the first week, everyone did the same thing in the morning. Working in heterogeneous groups, teachers and students would rotate through technology learning stations to obtain a baseline experience. In the afternoons, teachers received for-credit staff development on topics including multiple intelligences, multi-aged groupings, cooperative learning and technology, mathematics problem solving, and process writing. The inservice was provided by some district staff and some outside consultants.

The second week participants schedules were more open-ended. The groups of teachers and students conducted projects for delivery to each other. They developed products, designed cultures, and made presentations using a minimum of seven technology options!

Online Connections — Part of the Philosophy

Belnet began as a way to connect Integrated Technology Classroom teachers (a core group of seven at the end of 1990) to assist them with their leadership efforts across the district. It also brought on board the Technology Task Force, one member per building who manages the development of school-based technology plans and represents the needs of their schools at district discussions. Other groups also got on the conferencing system: from math and language arts assessment committees, to librarians, and administrators. Most of the people who participated had never been on a conferencing system before, and many had never used a computer before.

This communications system built on the values-driven organization that existed in Bellevue. It was easy to engage in conversations with people who shared a vision and did not depend on rules and formal structures to accomplish tasks. Conferencing itself has a flattening effect in an organization and everyone, from superintendent to teacher, were equals and peers on the network. That is one of the reasons that a great deal of real work is accomplished that way; and, to the delight of many, face-to-face meetings did not seem as necessary as before.

Now over 350 staff, both teachers and administrators, participate. The superintendent, a few assistant superintendents, the head of the union, and several principals are all online. Initially, there was a rush of enthusiasm for the new, and a lot of teachers signed on. Now the novelty has worn off and the system is not used as frequently, but it is more use more consistently to get real work done. New people sign on all the time as they find out about it. For most the purpose was just to communicate with peers, now Belnet connects with Internet, so more people want to use it — to gather information for lesson planning or just to communicate with their child in college. Internet classes are offered in the staff development catalog and teachers in each school can help others get on Belnet.

The online network has been used to further the district philosophy of peers learning from peers. Teachers found ways to collaborate, using the network for planning and even common teaching efforts. New ideas about practice (instructional materials, strategies, and reflection) passed through the network, as did discussions about using technology to achieve learning. The student and teacher summer training program, BYTE Camp, was reportedly developed on Belnet two years ago. The system also is providing an avenue for followup to staff development. As teachers complete a class and still may require further help, they know they can go on Belnet and find someone to answer their questions.

The district superintendent, Don O'Neil, was intrigued by Belnet. When he found out that 120 of his teachers were participating, he asked to get online, too. He was hesitant at first, since he didn't want to interfere with what the school staff were doing; he didn't want to be seen as looking over their shoulders; and he didn't want to inhibit their discussions. After observing for a while, he said he was surprised at the depth of discussions regarding education. "The teachers are engaged in serious dialogue about the hows and whys of teaching." As a result of this experience, he now believes that "the old hierarchy is dead; administrators can't control information. And the network provides a way for teachers or aides to say 'that's nonsense!' when administrators propose changes that won't work."

The system has separate, closed bulletin boards and discussion groups for each school building and for several curriculum committees, so that much administrative work and instructional preparation can get accomplished online. Larger administrative efforts, too, have been conducted online. However, there remains the problem of how to include outsiders, such as administrators, parents, and community members, on the system.

Catalogs and Classes

When technology was first introduced to Bellevue schools, staff development was a centralized process for both curriculum and for technology. There is still a quarterly catalog of courses, offering 450-500 contact hours, but direct instruction is only one of the ways teachers learn. So, as ITC classrooms began to serve as models, dissemination vehicles, and staff development opportunities, the district followed its central vision and moved to more on-site inservice and teacher development using collegial team groupings for both training and dissemination.

The traditional staff development program is a series of courses about a substantive topic, skill, or strategy. There have been more than 2,300 enrollments in staff development courses since the program began in 1988. All participation is voluntary, with the teacher-trainers receiving a modest fee. Not only teachers, but administrators and building principals also sign up for courses.

In the district's professional development program, there are numerous opportunities for learning about computers and how to use them for instruction. While staff development programs are offered by curriculum and by technology, the largest catalog is for technology.

In fall 1993, there were 17 different courses, mainly introductions to various aspects of using computers or to specific pieces of software. For winter (January to April), there were 45 different listings. These include:

- *basic courses* that offer an overview on how to use a computer, such as Introduction to Macintosh or Introduction to Windows;
- *first level or introductory courses* that require familiarity with a technology but introduce software or other applications, such as Introduction to the Camcorder, Introduction to Microsoft Works;
- *advanced courses* that sequence students beyond introductory materials and deal with professional applications, such as Desktop Publishing, Using Filemaker Pro for Report Formats); and
- *classroom applications* using computers as a teaching tool in the classroom, emphasizing how to use the program for assignments and classroom activities, such as Using Word Processing in the Primary Classroom, Videodisks and Middle School Curriculum.

Peiffer manages the technology staff development program. She defines the courses, recruits instructors, reviews evaluations, schedules class meetings, and monitors enrollments. In this year's catalog, she has removed the limit of 10 course hours maximum for any participant, included many new courses, and moved many of the classes to different school sites. Some classes have changed, been enlarged from fall to winter, while others have focused on narrower topics. The courses offer both breadth and depth, depending on the needs of a wide range of teachers. The inservice program is also offering visits to ITC classrooms this spring, as a way for teachers to see how some of their colleagues have integrated technology into their physical setting.

The procedures have been honed over the years and it appears to be a very efficient system. The administrative staff sends out confirmations to all registrants and tries to fill classes from the waiting lists if people call and say they can't come. Each class instructor (and there are often two, one assisting the other) receive a class roster and the name of a lab-support person for on-site help. The minimum enrollment is ten, in order to justify the cost of one instructor. Most classes have 12-15, enough to support instructor and assistant. All beginning classes are limited to twelve and advanced classes can include up to twenty participants. Instructors receive \$37.50 per hour of instruction time, including prep time. It is figured as \$25 per contact hour and 1/2 of that for prep. The assistant instructor gets \$15 per hour. Assistants report they get involved to further develop their own knowledge and skills, and then become the instructor the next time it is offered. When a new class is being taught for the first time, the pay is increased to \$50 per contact hour, the increase essentially for additional prep time. The classes are held in the afterschool hours, most beginning at 4:00 or 4:30 to give time for travel to the site.

Internal staff as instructors are always preferred to outside trainers for the technology program, especially since the internal instructor will be available for at least some teachers in his or her school. There is a high return rate for inservice classes — both for the instructors and the participants. Over the years, ITC teachers tend to become instructors, but teachers for these classes have come from a variety of subject areas and grades. Approximately twenty-five Bellevue teachers serve as instructors for technology courses that reach about eighty percent of the teaching staff each year.

Instructional Strategies

The formal inservice programs have their own progression, over years and over time within the school year. Broadly speaking, the courses are moving from technology instruction to integration of technology in instruction. Increasingly, teachers have learned how to use a computer for basic management and instructional activities. Surveys show that a large portion of the district's teachers know applications from word processing to databases. About eighty percent of elementary teachers report having word processing skills; fewer than fifty percent of middle school and about seventy percent of high school teachers say the same. Knowledge of data bases also shows the elementary teachers way ahead of middle and high school staffs. This is not unexpected, given the influence of ITCs in elementary schools. Generally though, as teachers become more capable, they want to use technology within the instructional day, but only after they feel comfortable with it.

With a strategy that looks like a systems approach to instruction, most classes meet at least twice, more often four times over a month or so. Instructors approach the topic through a presentation of theory and application, encourage tryout and reflection between class meetings, and pick up with discussion and more learning at the next session. Teachers are encouraged to apply what they learn immediately, and are urged to seek out the technology specialist at the school site for more information and support.

Peiffer says, "Effective staff development sessions start with the theory and then lead to practice. It's more like reflective practice, a conscious strategy of breaking courses into two parts or more. We only have a few one-session classes; most require teachers to come back and process what they have done. It becomes a model for how to teach others."

The constructivist philosophy that administrators and teachers talk about as central to the school system's instructional program is applied (and modeled) when the teachers become the students. This way of thinking is deeply imbedded in discussion about the staff development program — and in the staff development classes, as well. Bellevue's systems-like approach to inservice instruction presents: theory, application, tryout, reflect, discuss, and learn some more. But because the philosophy is so ingrained, everyone knows where to start and where they are going.

There *is* a system at work here, a collegial approach to individual professional development. Teachers find themselves quickly going from one course to another, building on initial learnings and trying out new ideas with on-site support. The combination of a series of classes to develop skills, and on-site peer coaching allow each participating teacher to progress at his or her rate and take as much support as they feel is needed. It is not a top down district; power is distributed to specialists at the district and then to the buildings.

Inservice Participants

The participants in staff development courses range in experience, grades taught, and almost everything else. Identifying demographics of enrollees is impossible; they represent the range of the instructional staff in the Bellevue system. However, in thinking about the kinds of teachers-as-learners in the technology staff development program, Marian Peiffer identified three different groups:

- the self taught, people who never go to inservice meetings, who teach with technology and get new information from trying things out, from going to conferences, and from reading. These are the highly motivated teachers willing to

adopt new technology because they find it interesting and potentially useful. About ten percent of the teachers would fall into this category.

- mainstream teachers who are people who like classes and who need a few structured classes to get going; they will come back for a few pointers and to learn new techniques and applications on a regular basis. Others need to attend every class to feel sufficiently confident to try out a new idea. These teachers take classes over and over in order to get it right. They make “hesitant progress,” but they want to be part of the changes going on in their schools. The majority of teachers, about sixty percent, would be placed here.
- people who don’t come to class because they are resistant, often because the class is not on the books and they don’t get paid for attending. Others want individual attention and use the first group to get personal instruction for everything they want to learn. They don’t have the strategies or know the good questions that will help them use technology in the classroom, so they take advantage of the modeling opportunities provided by the ITC teachers. An estimate of this group’s size would be about thirty percent.

To reach this last group, more of the staff development program is site-based, so teachers won’t have to go anywhere beyond their school (thus losing an excuse). Furthermore, by having a teacher in their own building conduct the course, participants know who to ask for further help. Since each of the staff development classes is relatively small, and courses need to be held where computers are located, distributing the inservice classes among several schools is a necessary strategy anyway. And the idea of bringing the technology class to the teacher has increased both participation within the school and satisfaction among the learners.

As Peiffer notes, “Effective staff development requires multiple strategies to get all people involved. With each year’s new learners, staff development needs to be more specific for many teachers. They aren’t the explorers; they need to know how to do it explicitly. ‘Give me a place to start, by the numbers.’ The explorers and pioneers are active technology users, now we have the settlers to help prepare.”

The average teacher has taken between three and four technology inservice classes over the past two years. The barriers to using technology in their classes that teachers report on a regular basis are that they lack specific training for using an application or that they are interested in technology but lack the time to learn. As described above, the district staff is trying to make these excuses less likely to count.

Infusing Technology in Secondary Schools

Both the middle schools and the high schools are in transition, trying to find appropriate strategies to incorporate technology into their instructional processes. At both levels, pressures are coming from students and their parents — people who have had productive technology experiences in the district’s elementary schools. Newsom’s analysis suggests that each educational level requires a different strategy. The middle school culture is resistant and more difficult to influence with an approach such as Integrated Technology Classrooms, an approach that worked for elementary schools. Teachers in middle schools are seeking more specific direction and assistance — from compensation for afterschool training to support staff available on-call.

High school faculties, on the other hand, seem to respond to different strategies. By building on the enthusiasm for content areas, teachers can see what technology can accomplish to further instruction. By demonstration, experimentation, and practice, high school teachers can incorporate technology into their classrooms. So entry into the high school is likely to be through the content area. The technology leaders of the high schools are beginning to meet regularly to discuss strategies. At this point, they are struggling to find the initial inroad that will excite enough faculty and instigate substantive change in the way technology is allocated and applied. Their discussions are focusing on gaining the interest of departmental leadership and building strategic alliances. They are enthusiastic but realistic about the difficulty of making swift changes in the schools.

Middle School Strategy

After several years of growing technology at the elementary grades, students and parents spread the word that technology was worth having in the schools. They have come to consider it a regular part of their schooling and expect their teachers to provide access and assign its use. Now, these students and their parents are pushing the middle schools to dramatically enhance their technology programs. And the high schools see this future coming.

In the past two years, significant amounts of equipment have been acquired for middle schools, and while the Integrated Technology Classroom model has some validity for these schools, the district and the school building technology leaders are developing a different approach. The acquisition and use of technology has been growing so rapidly that technology leaders at the building are spending too much time just getting the technology issues handled; they have little time to demonstrate how to conduct a lesson with it. So, they want a specialist come to each building to help a little each day. The district's current goal for middle schools is having a roving technology specialist in the building for two periods a day to help teachers make sense of what hardware and software they own. The cost of this person will be covered by both the district (for one period) and the school (for one period) as a way of gaining site-level commitment and sharing the costs locally.

Newsom, the technology and media coordinator for the district, sees the on-site or visiting technology specialist as part of the ongoing staff development program. If the ITC in elementary schools is a way of introducing and modeling the effective application of technology for learning, middle schools require a different approach that builds on their capacity to introduce technology. A specialist comes to the site and works with a teacher to do a demonstration lesson integrating technology — not a technology lesson, but a content lesson. The expectation is that, by working together, the skills will transfer to the classroom teacher from the technology specialist. Moreover, the technology coordinator at the school site is available to provide additional help when needed. This is a model for ongoing staff development, but it needs continuing support from a technology specialist for teachers to learn new approaches to instruction.

Some of the building coordinators hope to use release time within the building efficiently to bring other teachers in for demonstration lessons and instruction. For instance, teachers can join students in a HyperCard class being team taught by the classroom teacher and the technology specialist if they have a free period or release time during the day. In addition to team teaching, the specialist is doing: team development to help teachers become more aware of various pedagogies that incorporate technology, introducing and sharing projects that work, modeling team teaching and teaching through team teaching, and “fire starting,” that is, getting one or more members of the school faculty excited to the point that they now become models for others to emulate.

Staff Development Strategy

Newsom and Peiffer are consciously pushing staff development into the schools. Each year Peiffer finds ways to make it easier to participate in staff development. While informal and indirect staff development efforts complement the formal ones, even the formal listed inservice courses are increasingly held at different school buildings so teachers only moderately interested can attend.

As the district progresses on its path for technology acquisition and use, Peiffer recognizes the need to share even more of the responsibility for staff development with the school sites. The collection of inservice courses which she manages can only provide a starting point for many teachers. The need she sees is to distribute the work. “We want to develop a cadre of teachers and librarians who could 1) apply constructivist strategies in classrooms , 2) articulate what they were doing to their colleagues, 3) learn to become staff developers, and 4) learn to respond to colleagues effectively. Not every one can do it; it means that some people who can do great things alone, but not with or for a group, will go their own way. But enough of the others in a building can make great things occur.”

Newsom recalled one of the incidents that helped him define the nature of a staff development program he wanted to develop. A teacher who was burned out went to five-day Logo class, and started using Logo with her class, reported feeling rejuvenated, with new interests and new excitement. “It was hard for me to learn Logo,” she said, “and it had been a long time since I learned something new. It gave me an immediate empathy for what my students go through in learning math and reading.” This made the district team aware that teachers coming to their programs had no context for learning new materials, and suddenly experienced the same discontinuity as their students. As a result, the inservice courses were designed to include more explicit metacognitive aspects of learning, bringing in more reflection as part of learning about technology. The second-order effect that keeps getting reported by teacher-participants is empathy with students and resulting rejuvenation by organizing learning tasks differently so students are more interested in learning.

The leadership of the technology and staff development program has remained with Newsom, assisted by Peiffer, and supported, without reservation, by the superintendent and assistant superintendent. But the very nature of the district and the approach taken to disseminate technology to the schools means that others share a lot of the responsibility and much of the authority. Many of the elementary principals have supported the kinds of changes in pedagogy that technology had wrought. Individual ITC teachers have proven to be leaders for the district and even for the nation. Chris Held, one of the earliest ITCs is a presenter and keynoter at national conferences. Other teachers, and the district staff, too, have also published, presented, and consulted on technology.

Planning for the Future

Over this past year, the district has been pondering the appropriate models for staff development (beyond inservice courses) that will work at different school levels. The monthly, elementary school ITC open meetings are not working as well as they have in the past. One participant’s observation is that there is “too much production without much outcome; it takes too much energy to put it on, and the same people always came. Now there is more site-based work with the same cadre of people at each school.”

The district has created a small army of technology leaders from all the schools in the district. While the elementary schools have had a head start, the middle schools are moving quickly to develop the knowledge and sophistication about disseminating good practice and building strong collegial relationships. The high schools are just beginning to close ranks and work towards common goals for a technology program.

Every elementary school now has a technology aide, at least part time. This takes a lot of pressure off the ITC teachers, who had to deal with both technology and people. Now they can focus on joint lesson development or other curriculum-related efforts using technology. Primary and intermediate grade teachers have established collegial groups, providing support for the people who want to try out new ideas. The district also seems to encourage

leadership efforts by providing stipends and/or release time for teachers willing to take on new challenges.

With ITC or equivalent classrooms in each school (at least through middle school), there is now a technology person (many of whom have release time) to help others in the school. This person helps teachers get up to speed by team teaching, by “cheerleading,” by providing one-on-one training, and generally by giving advice. The technology leader also brings new ideas into the school, after meeting with colleagues from other ITCs at district meetings and sharing information. This leadership cadre is the consensus-building advisory group for the district, helping to identify the kinds of technology efforts needed in the schools, and reflecting what is going on at the grass roots.

A meeting of the technology leaders of all the schools in the district was called to review some of the planning efforts for the coming year. Under discussion was the acquisition of computers for individual teachers. The group reviewed an incentive plan to give every teacher a computer for personal use over the next two or three years. The first thought was to give them a laptop. This expenditure would reduce the funds available for schools to acquire more technology, but the group felt that getting computers into the hands of more teachers, and getting them to use it for meaningful work would pay off in the long run. Concerns range from giving people a computer they really didn’t know how to use or didn’t need, to recycling old Macintosh Classics for teachers to use at home. Much time was spent on how the ownership could transfer from the district to the teacher. The discussion was heated and no resolution emerged — but the levy hadn’t been voted on, either, at that time. Many of those teachers committed to incorporating technology in their classrooms felt that the fourteen hour days they were putting in deserved some personal benefits. They were not getting paid extra, only getting access to the newest technologies in sufficient quantities to be useful for instruction.

One of the elementary school (ITC) teachers at this meeting remarked about how things have changed over the past few years. “We’ve received a lot of equipment over the past year and, with our school plan calling for equal distribution of computers, all the classrooms now have seven Macs. Now I’m spending less time helping them learn the technology and spend more time working with them on instructional strategies and classroom management ideas — now that there are too many computers to ignore.”

What Has Been Learned?

For years, Bellvue has been trying out some of the critical elements of the school reform movement. They have put in place such components as: site-based management with site-based budgeting, a common, constructivist philosophy with much project-based instruction and cooperative and collegial learning, peer teaching for site-based staff development, a collegial communications system that encourages professional dialogue. The district staff have created a powerful and effective model to help teachers learn about technology and to be professionals. Many of the elements in the program have been done elsewhere, but they came together (and are still evolving) in Bellevue under strong district leadership and with substantial community support.

- *Consistent philosophy shared by the education community*
It’s hard to get somewhere if you don’t know where you are going. By beginning with an overarching philosophy and set of values, the district’s technology program encouraged teachers to develop skills and knowledge and connect individual practices into a coherent whole. Starting with a philosophy also enabled teachers to persist and experiment when things didn’t work out immediately, knowing that they

would be supported and encouraged by district administrators and even other teachers in the schools. Moreover, a consistent philosophy makes it easier to explain what the organization does, justifies it, and mobilize support from its internal and external constituencies — whatever the beliefs happen to be, in this instance, constructivism.

The specific philosophy works in this school system, mainly because it has a history of innovation, a supportive and involved community, and well-prepared and successful students. And the technology program changed to reflect the philosophy rather than use a basic skills, computer lab approach, as other neighboring — and successful — school systems have done. Some schools may find that another belief structure would work better for them and still adopt some the elements of staff development used in Bellevue. The fact that the philosophy so permeated the district staff and its programs may be more important than the nature of the beliefs.

- *Site-based staff development*

Plans developed locally — and confirmed district-wide — are owned by all. Whatever gets done in a school building is a result of building-level efforts. Teachers teach other teachers through modeling and demonstration, or through formal staff development courses taught after school in the same building. A knowledgeable person is on-site to help answer questions, help demonstrate a lesson, or troubleshoot the hardware. The impact can often be most powerful when teachers and students are working together (such as BYTE Camp).

Site-based staff development seems a natural outgrowth of site-based planning and management. But it took a different path; it was based on demands from potential technology-using teachers. Staff development is also more than just formal courses; there is great depth in the support structure. For new learnings to hold, having a buddy in the building is important; all students need someone to whom they can turn for help and support. By having a skilled teacher already using technology, such as an ITC classroom, and having the instructor handy (sometimes the same person), teachers can see how others apply concepts. Further, a visiting technology aide can team teach a lesson that uses the technology that is being taught and extend teacher's initial skill development. A teacher trying to learn how to use computers in their classroom can turn in several directions within the building and still find help. This depth of help makes it possible for changes to occur more quickly and be sustained over time.

- *Evolution, not revolution*

The program has evolved, with each new year providing opportunities for teachers to learn, to acquire equipment, or to engage new challenges. The district-wide expectation was not for sudden and dramatic change, but for hard work and the efforts of many to pay off over time. Programs began in a few elementary schools, migrated to others and were modified for middle schools; high schools are exploring how to make a program appropriate for their students. Consistent and substantial funding made it possible for schools to expect and to plan for regular infusions of technology.

Each element in the technology program appears to be undergoing an evolution. The online system started with an expectation that each school and each administrative program would participate. Some have started and fallen away, other have not had any meaningful use.

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- *Be flexible, encourage experimentation and sharing*
Once a workable program became established in the elementary school, teachers quickly discovered that it could not be moved, in full, to the middle schools. Through teacher discussions and sweat equity, a program appropriate to meet the needs of middle school teachers has emerged. High schools are looking at a different form of a technology program. There is no right answer for any educational level, nor for all schools or teachers at a level. For individual teachers, experimentation is also encouraged, and if it works, teachers teach others in the following year. This means frustrations for many participants. The district staff has been able to handle these difficulties with encouragement, hand-holding, promises of support, and a willingness to put themselves on the line.

Experimentation may seem like a luxury to many schools, especially since technology absorbs resources quickly. But it has worked because the entire technology effort began as an experiment; no one knew the right answers. The district staff and many of the computer-using instructional staff still admit to not being certain that they are doing the right things with technology — and for the moment they are safe. However, as the student population continues to change, and as instruction becomes more of a stretch to reach the same goals, and as the school board demands more information on “what difference technology makes,” more data and justification will be needed to substantiate the resources going to technology.

- *Planning, planning, and planning: an iterative model with participation*
Site-based planning is shared within the larger teacher community, so schools learn from each other about what works and what does not. Regular meetings of the building-level technology leaders, using release time, help maintain communications across buildings and school levels. And the district staff spends a great deal of time visiting schools, making phone calls, and supplying the support needed to initiate change.

There seems to be a balance between the intermediate-range planning that requires school technology plans and needs to be incorporated in district budgets, and the planning that encourages and takes advantage of new opportunities. The enthusiasm and commitment to making technology work at each school lead to experimenting with new technology with the support of the district staff. With resources arriving over time, the plan, too, must accommodate itself to improving staff skills, changing interests in how to use the technology, and the availability of more technology. To this district, plan is a verb, not a noun — and planning is often done on the fly.

The Bellevue school district has created an environment where its technology program and its staff development program in technology are inseparable. The program began when district technology staff made the case that a building's technology budget should not be distributed equally across the entire school staff, but rather concentrated in a single classroom in order to demonstrate the value of computers and other technologies for instruction. It has evolved into a sustained, site-based effort to plan and implement technology for instruction within the district's philosophy. The strategies and tactics are changing as initiatives move from elementary to secondary schools. And the teachers who have spent so much time creating this environment are beginning to tire. The coming years are critical, as the district needs to demonstrate that technology really makes a difference to the success of all kinds of students.

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Methods

The author of this case study has visited Bellevue School District in the past and had spent considerable time talking with John Newsom and Marian Peiffer. In addition, he had previously visited classes, talked with teachers, reviewed district information regarding current and planned technology integration. New data were collected for this case during a two-day visit. The first day was spent attending a technology committee meeting bringing together elementary, middle, and high school technology leaders. During this meeting, current technology activities in different Bellevue schools were discussed, and future plans were made. In addition, the author observed a subcommittee of technology leaders review and critique a technology plan submitted for district funding by a high school. During the second day of visit, the author spoke extensively with district and building administrators and reviewed what he had heard and learned with John Newsom and Marian Peiffer.

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