

PVPUSD District Technology Report from Site Visits conducted January 16, 2002

PALOS VERDES PENINSULA UNIFIED SCHOOL DISTRICT **Current Conditions Summary based on Site Visits to All Schools on January 16, 2002**

Based on one of the District's goals for 2001-02 to develop a district-wide technology plan, a series of events were schedule in January and February 2002. As a result of funding from the Peninsula Education Foundation, the District was able to hire a consultant, Ms. Bernajeon Porter, to launch the technology planning effort. Site visits, which included classroom observations and interviews with staff and students, were conducted on January 16, 2002. Fourteen schools were visited by more than 50 teachers, parents and administrators.

Each visiting team prepared a summary report of findings from the visit and a narrative report and rankings which describes the current conditions for each school on 21 technology readiness indicators. The attached narrative reports on each of the 21 indicators are compiled from each of the individual school reports. Each indicator is ranked for strengths and limiting forces. The action plans presented in the technology plan are based on the current conditions documented by this narrative and rankings.

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A. Readiness for Change

1. Collective Vision: The widespread involvement in shaping an urgent preferred future for new ways of working and learning possible only with technology.	Collective Vision Vision Power Establishing New Practices Broad Engagement/Ownership Compelling Urgency	Not in Place Emerging Dev. Optimal 
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Broad or general references are made to new learning practices during interviews at the schools. Staffs recognize that students need to be prepared for the high school / college / job market where high technology skills will be required. Staffs also recognize that changes in the use of technology must be made. Since teachers see technology as a tool to aid in learning, they want access to technology all day and to involve it in all subject areas. To that end the staffs work cooperatively to troubleshoot and come up with ways to use technology in all classes.

Several schools state that a technology vision is in place and the staff works together to realize that vision. Engagement and ownership is ongoing for both vision and implementation at some schools; new teachers are brought into the process through colleagues and staff development. One vision statement includes a description of technology use as being “infused throughout the curriculum” as an “invisible tool”. In other instances the principal holds the vision. One principal said, “Technology should be used to seamlessly help children learn throughout the day.” Principals want teacher comfort with the use of technology to be at a level that will allow them to use it like any other teaching tool. One principal stated he hires teachers with the school’s technology vision in mind. In other schools the school community is collaboratively designing a long-term vision for technology. Vision is ranked a very high priority at these schools. A few schools are just beginning to organize for developing a vision at their schools. A newly formed technology committee at one school has recognized the need for a collective vision. One principal said “We need a clear vision both at our school and at the district level.”

Although many schools recognize the value of a collective vision and have made progress in developing one, much remains to be done. Even with a vision there may be no consistency in grade level projects or skills. Some teachers stretch in articulating new learning practices but they are not supported and sustained. This translates into business-as-usual with new tools in most classrooms. A vision is in place at some schools but it is neither presently supporting nor guiding curriculum decisions or classroom practices. There is no ongoing engagement/ownership in implementation of that vision. At other schools, the vision needs to be spread to the entire staff and the community. Where no clear vision is currently in place, staff stated, “When one is developed it needs to be articulated to the teachers.”

Strengths

Adults interviewed at several schools commented on the enthusiasm and urgency for forming a collective vision is a priority based on the recent Board of Education goal.

The vision at some schools has broad references to new learning practices, whereas others view vision as developing grade specific projects to correlate with the district technology skills matrix.

Once the district defines a vision or direction for any priority the schools work toward that vision; the schools are successful in reaching goals once the vision is stated.

Limiting Forces

Schools have been working without an overall district vision since the major improvement goals of the last technology plan were achieved.

During interviews with teachers the following statement was made: “There is no vision at our school, and hopefully if we get one it will be derived collectively. Teachers need to be involved in the process.”

Teachers and principals all have different ideas about technology and use it in different ways.

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A. Readiness for Change

2. Community Support/Benefits: The development of commitment and sustained support from the community through participation, partnerships, and mutual benefits.	Community Support/Benefits Commitment/support Participation Partnerships Mutual benefits	Not in Place Emerging Dev. Optimal 
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The district's technology program has a long history of community support. The Peninsula Education Foundation donated \$85,000 to launch the computer education program in 1983. Since that time the individual school PTA/PTSA units have supported technology at the schools. PEF and PTA funds are used for staffing as well as hardware and software purchases at each school. At one school PTA recently purchased additional computers so that each classroom has at least one up-to-date computer. In addition to monetary support, parents and community members volunteer to serve on decision-making committees and contribute technical expertise.

Parents and the community serve on technology committees, voice their interest through School Site Council, and support technology through donations of money and equipment. Site-level technology committees meet regularly to deal with all aspects of planning and implementation of technology at each site. Recently the community participated in technology town hall meetings, site visits, data analysis, and interviews. The parents who were interviewed commented on the need for a collective vision to benefit all students since the use of technology is important in the community.

The schools use email and web pages to communicate with parents. Staff members maintain the school and teacher web pages. However, teachers express frustration with the amount of time it takes to maintain website for school-to-home communications. Email is used by teachers and principals to communicate with families.

In spite of this support there is no broad engagement of parents or community in planning for more than half of the schools reported during interviews. 80-90% of the community is not involved in the long term planning of how schools will benefit from technology. Short-term partnerships have been established, but long-term plans have not been made.

Strengths

Parents supply funding for equipment; at several schools; scrip earnings have been designated as a technology fundraiser.

Technology committees firmly established at several schools consist of administration, teachers, and parents.

Technology planning activities involve parents and community members to increase awareness about the use of technology.

There is strong community support of technology within the technology-literate community.

Limiting Forces

An established forum for technology does not exist; only one school uses evening Technology Forums to showcase examples of technology use.

Parents and the community need to become involved in future and ongoing dialogue about technology use in the schools.

Teachers stated that "PTA supports showy stuff" and they feel schools need to develop "better use of gift funds".

Technology resources in the schools need to be more available to the community through open lab time and additional adult education classes.

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<p>3. Leadership Capacity: The understanding, involvement and leadership demonstrated by most administrators.</p>	<p>Leadership Capacity Stewardship Change Management Collegial Strategizing Support/Expectation of Staff Technical/Professional Skills Urgency/Commitment</p>	<p style="text-align: center;">Not in Place Emerging Dev. Optimal</p> <div style="text-align: center;"> </div>
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Leaders within the schools articulate a “must do attitude” to move the vision into practice. Most school leadership has high confidence that staff will successfully implement technology. At one school the principal is dependent on site technology “experts” to help guide technology decisions throughout the school. Administration and staff recognize need for change yet look to a select few individuals to make the changes. The levels of leadership capacity existing throughout the district is reflected through the following comments:

- Leadership realizes need for technology, encourages teachers to try literacy, adapting and transforming uses, encourages collegial collaboration, and makes an effort to assist others with technology questions.
- “Site experts” help guide the decision-making process for technology use.
- Through the school leadership and technology committees, all stakeholders have a say in the technology decisions.
- Support is given to teachers wishing to use technology but there are no formal expectations for all staff.
- Staff members at several schools comment that simply using technology isn’t enough.
- When asked, staff members could not articulate a vision that involves technology, nor is there any accountability to use technology in the classroom beyond the “Just Use It” stage.
- When asked whether teacher performance of effective uses of technology were evaluated, the principal stated that she did not do such evaluation, but she was aware of who was using it, and how it was being used.
- The lack of a current technology vision leaves personnel with a need for leadership and feeling powerless.

The principals at all schools offer varying views of technology’s role and impact in teaching and learning. Principals stated, “The goal is to improve all students”; others recognize the need and desire to support staff in making instructional changes. Principals expect technology use to support learning; however they are aware of the varying skills and comfort levels of staff in use of technology. Although one principal said technology “makes my job easier” it is quite different to have teachers at a comfort level that will allow them to use it like any other teaching tool. Several principals use technology to improve the management of the school, for example daily e-mail to minimize the necessity of meetings. Another principal stated during interviews that she fears teachers are not moving forward and in turn, “getting in the way of student success.”

One principal encourages teachers wishing to use technology and has high hopes for bringing all teachers on board; another principal encourages grade level sharing of projects utilizing technology. Principals estimate staff proficiency at 70-80% at several schools and they expect teachers to “expose themselves to the possibilities” of technology use and the principals are aware of “who is using and who is not”.

In a few instances teachers are not hung up on what they do not have, but are working with what they do have and spoke of what they would do with more resources. Through interviews with the principal and members of technology team, there is an abundance of enthusiasm and drive to obtain results.

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Business-as-usual is common but not viewed as acceptable. The principal and staff view getting to the transforming level of technology as a "must do." "We need to be patient; we need to be more sensitive to teachers who progress slower. The faster ones need to stop and listen to the slower ones." "The same people often attend meetings and communication is usually limited to members of the leadership committee." Site leaders can articulate the vision but have "it can't happen" attitudes to contend with at times. Due to modernization at the schools one principal feels that the teachers are under a great amount of stress and do not want to overburden them with expectations; "technology is not front burner this year." Teachers spoke of how in the past the district would have an issue be a buzz and then it would fizzle out.

Strengths

Many teachers stay current in technology, they show enthusiasm and commitment toward change in educational practices, they possess skills necessary for advanced use of technology, and they express positive attitudes in how they would achieve the next step in their use of technology.

Site leadership recognizes the need for change in instructional practices and seeks support and training in making instructional changes happen.

Limiting Factors

Smoother lines of communication and support need to be established.


Limited professional development for school leadership is limited.

No formal expectations exist for all staff members to incorporate adapting and transforming uses of technology into their classrooms.

Managing the business of the day requires most of the leadership time available. There is an awareness of the need for new vision implementation, however no formal or collective strategy in place.

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A. Readiness for Change

<p>4. Innovators: The visible presence of “early adopters” who are developing and communicating successful curriculum models of effective technology use.</p>	<p style="text-align: center;">Innovators</p> <p style="text-align: center;">Percentage of Early Adopters Developing Curriculum Models Communication of Success</p>	<p style="text-align: center;">Not in Place Emerging Dev. Optimal</p> 
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Based on statistics collected at site visits the extent of innovation occurring in the schools averages about 20% of the teaching staff. Four out of six teachers at several schools are comfortable allowing students to guide their own learning where appropriate. At one school 25% of the staff have advanced degrees in educational technology which enhances the likelihood of innovation. Innovators show willingness to try new ideas and value student work by displaying it in the classroom. These innovators work at mentoring or teaching other staff, however they are not satisfied with the existing situation. The innovators possess the technology skills to drive the curriculum forward. They express the sentiment that technology is important and the learning must be more rigorous in this area. While they can articulate the vision, have the technology skills and desire to take the next step, and collaborate with diverse groups across grade and skill levels, many other teachers are still unaware of what the “trailblazers” are doing with technology.

Staff members share experiences about new curricular ideas using technology. Teachers informally discuss the successes they have in their classrooms during break time. Anecdotal success stories are communicated to the rest of the staff during Monday staff development meetings. At some schools communication of success stories is infrequent and there is little communication between staff on how to create technology-infused curriculum. However, during interviews teachers described the following success stories about innovative uses of technology:

- “A parent of one of my students went to conduct a study in Antarctica. He sent pictures back in real time through email. I was able to extend learning in class from there.”
- “After giving a group assignment, the students had the interest to explore related topics of interest. Each group project became a unique report.”
- During interviews teachers described learning taking place because of the technology activities being done; “when technology is used as an aid in learning, the information gained by students is amazing, and the products that result are incredible.”
- “The rest of the staff needs to be brought in through the sharing of success stories.”

One teacher defined the following as her goals for innovative use of classroom technology:

- To allow students to become more self-directed learners and explore some of their own interests
- To have students access information on the computer more often through more project based instruction
- To understand how to use technology as a tool to benefit student learning

Unfortunately complaints about lack of equipment regularly take center stage when conversations about technology arise. At several schools only a few student products showing effective uses of technology were evident. During interviews the computer teacher discussed staff collaboration as a way to promote technology-utilizing lessons. When asked about specific technological uses, only 10% of the staff interviewed expressed the knowledge of how to combine cognitive thinking skills with technology. Staffs need to develop new curriculum models of effective uses of technology resources. Lack of connectivity and crowded classrooms limit innovation for some teachers. Teachers who taught in a district summer school enrichment program that allowed students to explore answers to self-developed questions through the use of technology have carried these practices back to colleagues.

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Strengths

Innovators communicate with other teachers when they use technology effectively and they share projects and ideas with colleagues.

A minimum of one teacher per grade level is proficient and a leader/innovator at several schools.

Teachers develop new types of projects based on information management model covered in ongoing staff development at one school and at a summer technology institute for teachers from six elementary schools.

Communication of success stories is regular and evident.

Limiting Factors

Limited development of new models of effective use of technology resources occurs at most schools.

Success stories in the use of technology are predominately shared only among grade level colleagues and not frequently communicated to all teachers and to the parent community.

Little communication exists between staff on how to create technology-infused learning experiences.

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A. Readiness for Change

5. Staff Capacity: The percentage of staff with adequate technical skills and instructional practices to effectively link standards-based content and technology resources.	Staff Capacity Technical Skills Professional Practices Curriculum Linking Skills	Not in Place Emerging Dev. Optimal
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A majority of teachers identify themselves as “at least confident on their own” technology users and are broadening their experiences as technology become more accessible and stable. During interviews teachers said that they were confident with at least two to three technology tools. Every staff member interviewed at several schools was comfortable with the use of technology. Many teachers have sufficient skills and confidence to utilize technological tools. Teachers are confident when it came to the use of technology and they pervasively identify three to four learning practices using technology with students

The following quantitative comments ranging from “not in place” to “optimal” levels of staff capacity were gathered during interviews and site visits:

50% percent of staff do not utilize technology and do not feel comfortable using it to any extent.	25% of teachers were not using technology at all.	50% percent of staff identifies themselves as technology users that are “still in the learning phases”.
50% percent of staff identifies themselves as technology users who are “comfortable on their own.”	50% percent of staff utilize technology in their daily lives and feel comfortable using technology in their classrooms.	50-75 percent of teachers identify themselves as “at least confident on their own” technology users.
70% of teachers identify themselves “at least confident on their own” technology users	Principal stated in interview that 75% of teachers are proficient in technology.	75% of teachers interviewed identify themselves as technologically proficient on their own and that they would be capable of teaching some technology skills to others
90-100% of the staff is comfortable as uses and can operate three to four technology uses.		Four out of the four teachers interviewed said they were all willing to take risks

During interviews teachers told about their comfort levels and they felt confident using software programs (e.g. word processing, games, email, internet). Teachers collaborate by grade levels regularly; for example 2nd grade working on a long-term project involving a story and pictures. A fair number of teachers show the willingness to use technology and design uses on their own, without any staff development or outside guidance. Most teachers tell of successes with technology. Teachers plan information-based projects, students learn how to evaluate sources, and students evaluate their own work.

PowerPoint and a web browser are the two main tools numerous teachers use with students. At one school 90% of teachers use a gradebook program to aid grade recording. Only 15% of the teachers interviewed at another school had the capacity to think about using technology in transforming ways for students. However, teachers do show the aptitude to learn if given some direction. Lack of common planning time and very limited classroom pace tend to limit growth; better classroom set up would allow more group work. 25-50% of teachers rely on the “technology aide” to use technology with their students at the elementary level. Computer lab time has typically been seen by 25-50% of teachers as “free time,” therefore, rarely connects to current in class projects. Information is not gathered and shared among staff to evaluate what is working and what is not.

The staff at several schools consistently integrate technology in adapting way. During one interview a teacher expressed a desire for more collaboration or staff development in developing curriculum links to technology resources. Less than 50% of teachers at another schools demonstrate skills in designing and assessing effective curriculum links to technology resources for transforming uses with students. Only one

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to two technology tools and learning practices are identified as being used with confidence by many teachers. Teachers see technology as the product rather than a means to enhance higher-level thinking skills.

Strengths

Staff motivation and expanded resources allow changes in instructional practices.

Many teachers demonstrate personal and professional technology proficiency.

Teachers demonstrate skills in designing and assessing effective curriculum links to technology resources for adapting uses with students.


Limiting Factors

Limited number of teachers demonstrate skills in designing and assessing effective curriculum links to technology resources for transforming uses with students.

Teachers not using skills to design lessons designing and assessing effective curriculum linking technology uses for transforming uses with students.

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A. Readiness for Change

6. Pedagogical Readiness: The pervasive practice of student-centered learning classroom with a major focus on inquiry, investigation, and knowledge construction demonstrating sufficient engaged learning practices to support effective use of technology.	Pedagogical Readiness Student-Centered Classrooms Inquiry/Investigation Knowledge-Construction	Not in Place Emerging Dev. Optimal 
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Classroom configurations are one indicator of the degree of student-centered versus teacher-centered learning environments. The following statements collected during interviews and site visits compare statements related to student-centered and/or teacher-centered direct instruction classrooms that exist at each school.

- Between 15 and 100% of the teachers exhibit student-centered classrooms at district schools.
- Some classrooms arranged in student-centered way
- Classroom furniture arranged for collaboration
- Collaborative seating and assignments
- 75 % of classrooms visited at several schools are set up in cooperative groups
- Tables are grouped for four students in art class
- Most teachers exhibit student-centered classrooms at the elementary level
- Student desks are arranged in collaborative groups
- Student desks are in clusters or other formations allowing for students to interact
- Approximately 15% of classrooms in schools are student-centered in relation to technology.
- Teaching desk at front of class in over 75% of classrooms visited
- Less than 15% of teachers exhibit student-centered classrooms
- Desks were in rows
- Many classes are set up for direct instruction and information delivery
- The walk-through showed a clear picture of a typical classroom set-up. Chairs in rows, teacher in front of the classroom teaching. No other type of classroom configuration was evident
- Classrooms are not set up to be conducive for collaborative student working

Comments from one school visit indicate the dilemma that exists between the student-centered and teacher-center models: “All the classrooms visited indicated a direct method of instruction as the way to teach our students. This is not good or bad, it’s the way it has always been and there has been a lot of success with this type of instruction.”

In additional to classroom furniture arrangements, the extent of inquiry and independent research serves as an indicator of the pedagogical readiness in schools. Two schools reported 20-40% of teachers use inquiry or investigation in their classrooms at least 3-4 times a year while another school stated teachers use of inquiry or investigation occurs at least monthly. Students do inquiry-based learning as frequently as weekly in science classes. Not enough evidence was collected to assess inquiry in other subjects. However, formal inquiry and investigation lessons occur infrequently in many classrooms.

Students said they investigate research topics on their own. Teachers encourage students to construct their own knowledge and understand the subject matter. During student interviews students described using technology for independent research as well as for review and reinforcement of concepts. Students could explain what information they were getting, how they were going to use it, how they used the technology to help them understand the content. Some interviews indicated a lack of such activities, little knowledge construction evident, and student demonstration of new understandings or learning experiences occurs seldom or never in many classrooms.

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Elementary level teachers have investigations planned within specific units in science and social studies:

3rd grade explores Native American Tribes

3rd grade studies the rainforests.

3rd grade researches animals

4th/5th grades explore CA Missions, Gold Rush, explorers

5th grade does detailed research on how to spend

\$1,000,000

5th grade explores information on a state for an "I-Search" project.

Strengths

Constructivist activities are implemented to take advantage of smaller class sizes and furniture arrangements.

Inquiry or investigation mostly occurs at least monthly.

Limiting Forces

Teachers need to require students to demonstrate new understandings and learning experiences on a more regular basis.

Teachers tend to center learning around scheduled lab times. Therefore, quality projects using technology occur infrequently.

Classroom management of student centered inquiry activities using technology is difficult and causes frustration because of limited equipment in the classrooms.

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B. Teaching and Learning

7. Equitable Learning Experiences: The practice of defining, implementing and assessing consistent learning experiences with technology for all students.	Equitable Learning Experiences Regular Use for All Students Essential Experiences Identified, Provided and Measured for All Students Resourcing Special Population Needs	Not in Place Emerging Dev. Optimal <div style="text-align: center; margin-top: 10px;"> </div>
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Student access to technology varies widely throughout the school district as noted in findings from the site visits and interviews. However, nearly all students interviewed have access to at least one computer and the Internet in their homes. Home computers are used for independent research, homework, and games. Students come to school with a wide variety of technology backgrounds based on how they use technology at home. At one school 75% of students interviewed said they only use technology at school for reading or keyboarding games. Technology is utilized as a reward after work is completed in numerous classrooms.

At the elementary level all students at nine schools use computers in computer labs and library media centers for 30 to 70 minutes weekly. 10% to 50% of the students use computers on a daily basis at these nine schools. All students in other specific classrooms and throughout one elementary school use computers on a daily basis. "All students have access to computers whenever they need". At the intermediate and high school levels all students use computers on a daily basis in specific elective classes. Other secondary classes use computers to varying degrees. Teachers use 90% of the classroom computers at one intermediate school. More than 90% of students with special needs (RSP and ELL) use technology to provide curriculum support and improve individual skills at several schools. Assignments are adapted for special populations; however, some special needs students may miss out on weekly computer time.

Nearly every classroom throughout the school district has at least one computer connected to network resources including the Internet. The number of computers per classroom ranges from one computer to more the eight. Five or more computers exist in approximately 10% of all classrooms. Due to the requirements of a technology staff development grant, the 4th and 5th grade classrooms at seven elementary schools have a ratio of 10 students to one computer. As the result of the Digital High School Program and other one-time state funding, the ratio of students to computers at the high school level has been reduced to 4.75 students to each computer throughout the campuses.

Although technology is pervasive throughout the school district the extent to which it is used varies from school to school. During site visits it was noted that 75% of computers were turned off at one school and 75% were turned on at another school during the site visit walk-throughs. Of the 17 classroom computers seen at a third school, seven were turned on and four were being used by students. Computer labs at the intermediate level range in use for elective classes only to fully packed schedules. Computers in the libraries and open access labs at the high school are in full use throughout the day.

Another critical element for equitable learning experiences involves whether essential learning experiences for students are identified, provided, and measured. During interviews principals, teachers and students described the following range of uses:

- Computers are used for inquiry-based learning as well as composition.
- 80% of classrooms utilize adapting uses of technology with all their students
- Each grade level team identifies essential experiences and grade level projects in technology.
- One computer teacher identifies word processing, spreadsheet, presentation, and web design as skills that all students learn in her classes.
- All students learn basic word processing skills moving into Internet research
- Equitable learning experiences for transforming uses frequently does not exist.
- Technology is not used at school in a routine fashion, but in a purely arbitrary manner based on student interviews.

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- Students said they used technology for independent research as well as for review and reinforcement of concepts.
- An ELL teacher said that her best hope for technology use is that it will allow her ELL students to work on language skills at their own levels and pace.
- Teachers stated a need for more uses of technology by students other than word processing.
- One principal stated that no student is passed by, but some classrooms have more technology use than others.
- Based on interviews at one school, 80% of the students do not experience essential technology learning experiences; they only use it technology literacy skills.
- Staff has not identified ways to measure the benefits and outcomes of technology use.

Strengths

Essential, basic technology skills are identified for students.

Staff discerns and adapts uses of technology in ways that are appropriate for students.

Ideal technology uses are beginning to be identified.

Limiting Factors

A means of measuring for benefits and results for all students is lacking.


Essential experiences for all students are identified but not supported or measured. Few students use technology daily.

Technology resources are not effectively used, available or supported to close the gap for special populations at many schools.

Students experience daily use of technology, but usually not in a manner to maximize the benefits for student learning results.

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B. Teaching and Learning

<p>8. Libraries as Information Centers: The degree to which librarians are co-planners with teachers as well as leaders developing information literacy and digital resource-based learning.</p>	<p>Libraries as Information Centers Information Literacy Curriculum Instructional Collaboration Digital Materials/Access Leadership in Effective Technology Uses/Issues</p>	<p style="text-align: right; font-size: small;">Not in Place Emerging Dev. Optimal</p> <div style="text-align: center;">  </div>
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The library media center enhances learning and enriches classroom activities. The libraries are well stocked with materials of mixed media and provide access to electronic information beyond the school walls. Students use an automated card catalog to locate books at every school. Students were observed working with partners on programs, working on Internet activities, moving easily from books to computer workstations, and learning computer skills. Several schools indicated that the library facility is too small for the student population and lacks adequate workspace for students and staff, no tables to write on and limited carpeted areas.

Library media center personnel meet with teachers to enrich classroom activities and support learning, follow the standards at each grade level, and pull books for special projects. They also plan with teachers for media center use at several schools. The library media center staff is charged with teaching information literacy skills to students. The library lessons are separate from classroom activities at several schools. Some schools report library staffs having minimal, varied and informal co-planning time with teachers. Each month at one school, the media specialist puts a handout in the teachers' boxes. Teachers are asked to fill out the handout explaining what curriculum topics they will be covering in the classroom and return it to the media specialist.

Library media centers have between two to 12 networked computers that are set up for students to locate library materials or to use electronic resources and the Internet. The library was described as "very user friendly and there seems to be an adequate number of computers available for students to use" at several schools. The computers may be set up for multiple users at a single computer for collaborative projects. However, at one school the computers in the back of the library are frequently not used by students.

Strengths

Planning with teachers for media use occurs regularly.

The library media center is the hub of technology access and access to electronic information.

Library aides support and aid in the learning of library skills as identified for grade levels and they gather information from teachers for ways they can help support the curriculum.

The parent groups help with funding for library materials.

Limiting Forces

The role of "library as information center" varies among the schools and information literacy leadership is not evident.

Information literacy skills are implemented by some classroom teachers and library staff but are not measured for all students.


Information literacy skills are not identified, implemented, or measured at many schools.

Use of library media center time for research is limited.

Access to electronic library materials, including the electronic catalogue is not available from the classroom computers.

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B. Teaching and Learning

<p>9. Instructional Practices: The actions and roles of teachers that must be instructionally present in classrooms for students to achieve “Transforming Uses” of technology.</p>	<p>Instructional Practices</p> <p>Professional Engagement Transforming Practices Assessment Practices Instructional Change</p>	<p style="font-size: small;">Not in Place Emerging Dev. Optimal</p> 
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Many teachers are adequately proficient using technology and recognize the potential value of using technology in their classrooms. A majority of teachers (50-75%) engage in ongoing professional enrichment activities which include coursework, online classes, workshops, conferences, professional magazines, professional collaboration, etc. Many teachers are open to change and are eager to learn more uses for the technology at hand. However there are barriers: teacher workload is high with many curricular and extracurricular responsibilities and teachers lack the time in their schedules to attend in-service meetings or to meet with their colleagues. During interviews teachers said, “After school is not the best time for in-service training” and “We must have reliable technical support.”

The appropriateness of professional enrichment or development activities determines whether instructional practices change or improve. During one site visit, in 80% of the classrooms technology was an activity students did when finished with “regular” work. In other classrooms, 80% of teachers were observed using technology for “automating” or adapting existing instructional tasks. Up to 75% of teachers at many schools use technology in literacy or adapting ways to enhance the appearance of existing projects and to gain technical skills. Examples of such use included:

- Science Review CD-ROM
- Research reports published with PowerPoint
- Use technology to enhance or augment the current teaching practices
- Final drafts typed, but not composed, using word processing
- Using instructional games
- Learning word processing skills” (i.e. how to cut and paste, copy)
- Typing in a story that has already been edited

Technology is being used to enhance educational experiences through alternative or supplemental activities in some classrooms. Between 15 and 50% of teachers at several schools can identify new instructional practices that are enabled by technology use. 15-25% of teachers indicate the need for technology in order to obtain certain learning outcomes. During teacher interviews teachers stated that they rarely utilize more invasive uses of technology, other than word processing or Power Point, for student learning. In other cases, 80% of the student tasks witnessed or described included Internet research, word processing, or presentation software use as the final result. Furthermore, many times technology uses do not encourage higher-level thinking, but only to gain or improve technical skills. In some circumstances technology is primarily taught as a separate subject. In a few instances classroom activities matched the definition of transforming uses, however in most instances transforming practices were not evident beyond early adapters and innovators.

Characteristics of new instructional practices include:

- Peers, as well as teachers, do evaluation of student work
- Student uses of technology are imbedded in the curriculum
- Students are able to choose topics for research
- Students said their finished products are presented to the class.
- Technology use is initiated by students

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Many technology tasks are ungraded or graded using traditional assessment strategies. Assessment of learning or student products, if any, used traditional assessment strategies. No evidence exists that expectations for assessment on the impact of technology exist in most schools.

Strengths

Teachers are willing to try new instructional practices.

Limiting Factors

Technology uses are mostly adapting with little assessment of the impact of technology on student learning

Assessment or evaluation procedures are needed to determine the value of transforming uses of technology.

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B. Teaching and Learning

10. Learning Uses: The actions, activities, and roles of students in effectively using technology to increase their ability to be learners.	Learning Uses Collegial Work Authentic Tasks Cognitive Tasks Frequency of Practice	Not in Place Emerging Dev. Optimal <div style="text-align: center; margin-top: 10px;"> </div>
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The following quote summarizes the ultimate goal for technology use for student learning results:
 “My best hope for student learning and technology uses is for the students to experience a greater depth of understanding and creativity that wouldn’t be possible without technology tools.”

The success in reaching this goal varies from one classroom to another. Collegial work and authentic tasks are evident in classrooms but not necessarily through utilizing technology. In general, student group tasks are teacher directed; teachers define the groups and assign tasks. Teachers display student work as a reflection of mastery of curricular concepts. During interviews one teacher explained projects her students completed using technology, other teachers told about using software to “enhance the curriculum”, and others stated that they often utilize the Internet for student research (both teacher and student directed) and other technology tools (PowerPoint, website construction, etc.) as part of their regular curriculum. Classroom observations included animal reports that were word processed with graphic covers, PowerPoint presentations of research reports, poetry word-processed with graphic layout, and displays of Kid Pix drawings of life cycles.

Teachers commented during site visits “students seem comfortable using technology”. Students are producing projects that enhance or support the curriculum. Most students have access to technology at home therefore they work with technology out of class. Student products showed cognitive tasks that demonstrated understanding of existing knowledge. Many student tasks are teacher directed, with limited authentic tasks. In some instances student work is similar in appearance (cookie-cutter type products) and on some occasions student work looks exactly alike. As a result of extensive staff development, students are lead through activities using the information management model. Students become the experts and develop their own questions and then work with peers to synthesize and display knowledge. Students who have access at school and home to the latest technology, expressed excitement about the use of technology in their school work. Students told of a project where they created a budget for their “journey.”

During student interviews students described using technology for independent research as well as for review and reinforcement of concepts at school. During teacher interviews teachers stated that the technology tasks for student learning usually are created to enhance or improve the individual student’s knowledge. However teachers stated that they usually design the tasks that require the use of technology. Most assignments are teacher-directed and generate learning for the student only; students stated they had little say in the topics being researched. But when interviewed, 75-90% of students rated themselves as capable of using technology on their own. Students need to share their expertise with one another on a more frequent basis.

The frequency of student use of technology varies widely. Some students use technology on a daily basis, other use it only during scheduled weekly computer lab time. Lack of time and limited equipment were cited as reasons for infrequent use of technology. 50-75% of students interviewed expressed desire to use the computer more often during school and were eager to discuss prior technology-based projects. At one school 40% of technology tasks involved literacy uses of technology (how to use hardware and software) but at other schools teachers plan learning activities that involve adaptive uses of technology throughout the year.

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Strengths

Student work is creative and displayed on a routine basis.

Some cognitive tasks demonstrate understanding of existing knowledge.

Tasks involving technology benefit student and teacher only but do not involve students with other schools and the broader community.

Teachers talk about, but have not implemented, activities that benefit others once a project is completed. For example, a Spanish class project involving interviews with teachers, professionals to determine the Hispanic influences in Palos Verdes which can then be posted to a website for community benefit.

Limiting Forces


Few activities involve cognitive tasks that require creating an original product which creates new meanings and understandings.

Student collegial work between classrooms and other schools or the community at large is limited.

Tasks, products, and activities generally demonstrate learning that benefits the student only.

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B. Teaching and Learning

12. Home / School Connection: The collaboration and support between home/school that enables learning to extend beyond the school day.	Home/School Connection Collaborative Processes Two-way Communications Supporting Parents as Partners in Learning	Not in Place Emerging Dev. Optimal 
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Technology can increase school communication with parents and create informal extensions of learning between home and school. Parents are aware of school activities by a regular stream of traditional communications. Several schools are in the beginning stages of using technology for school to home communication via e-mails and web pages. Teacher web sites and email already are communication tools for home school connections in other schools. The extent of use varies from school to school; the following data summarizes various levels of email use between teachers and homes.

Parents able to contact nearly with all teachers with questions via email or voicemail at many schools.	Most teachers utilize email to communicate with parents and individual students.	Up to 75% of the teachers respond to parents via e-mail
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Teacher web pages and school web pages also provide home to school communication as shown by the following comments from interviews. School web pages are updated regularly and include schedules, calendars and information about school activities, school newspapers, athletics, special programs, and school recognitions.

80%+ of teachers at one school have homework websites	35% of the teachers have a web site	30% of the teachers at one school have web sites with curriculum information
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During interviews teachers stated that many of their colleagues utilize class websites to communicate with parents and students. Although most of the communications via web pages is one-way from school to home, some innovators participate in collaboration and two-way communication via email with parents. Teachers and administrators use technology to engage parents as partners in learning. Teachers inform parents of ways they can help their children learn at home. However, fewer than 25% of teachers at one school report suggest to students that they use technology at home to support their schoolwork.

Strengths

Extensive use of technology resources to increase communication occurs at several schools through web pages, e-mail, and homework web pages.

Teachers maintain grades and print out progress reports at any time using grade book programs.

Students have and use technology at home to write papers, do research and find information on the Internet for class assignments.

Due to varied levels of access, students engage in school-related uses of technology at home on a voluntary basis.

Limiting Forces

With nearly 100% of the students and parents able to use a computer and the Internet at home, the district needs to capitalize on this in a more formalized fashion.


There is limited electronic communication and extensions of learning such as technology training for parents, and equipment access after school, or equipment loaner programs for at home use.

The lines of communication tend to be one way and many times limited to print media. More two-way means of electronic communication are needed.

Parents have no access online information concerning their student's performance or progress at most schools.

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C. Technology Deployment

<p>13. Technology Planning/ Implementation: The availability and organization of technology tools around learning and working needs.</p>	<p>Technology Planning Implementation Vision Implementation Integrated with school improvement/instructional goals Organized for student results Continuous gap analysis/revisions</p>	<p style="text-align: right; font-size: small;">Not in Place Emerging Dev. Optimal</p> <div style="text-align: center;">  </div>
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Every school approaches technology planning and implementation differently and to varying degrees. All school staff members who were interviewed commented on the need for a new technology plan. They recognize that technology plans are not developed fully throughout the district. 90% of interviewees at one school expressed the need for an improved and more comprehensive technology plan. At one school, 75% of the staff “bought into the vision and is ready to go.” Frequently, school administrators look to each school’s “technology leaders” to guide implementation of the technology vision or plan. As an example, a small group of teachers observed an innovative elementary school program, shared observations with other staff and parents, and created a technology vision for their school.

The technology plan at one school exists and was written by the technology committee composed of one site administrator, three teachers, and four to five parents. One site has achieved several specifics of its technology plan (i.e. two computers in every classroom, four in upper grade rooms). Every school described their current technology vision and plan implementation status differently:

Technology vision implementation is ...

- stalled due to time and equipment restraints.
- rapid and on schedule.
- fragmented, outdated, and out of circulation
- in place but is moving slowly.
- focused on equipment rather than usage
- aggressive, explicit, and referred to since its creation in 1996
- behind schedule
- the responsibility of a single individual

Technology plan implementation is ...

- written to support instructional practices and communication with parents
- organized for technological efforts and results rather than learning results
- outdated and not integrated with instructional goals
- the responsibility of a small group of stakeholders or a few selected or interested staff members
- separate effort from school improvement/instructional goals

At one school, relocation of the computer lab resulted in less space and computer lab time. Therefore vision implementation was reduced for those teachers who previously relied on the lab. Other barriers limit progress. These barriers include: minimal technical help, lack of additional Internet connections, major focus on equipment issues, and no district or school site assessment is in place.

Strengths

The technology plan and implementation are tied to school improvement and are part of the instructional goals at several schools.

All stakeholders, staff members and community members participate in the creation of technology plans.

Grade level projects are planned, arranged, and organized for learning results not technology skills. They are written into the Site Action Plan for School Improvement in at least one school.

Limiting Forces

Equipment deficits greatly hinder the school’s ability to move forward with a technology plan; gaps are sporadically analyzed and baseline data is inadequate for system decisions.

During interviews it was noted that the “trailblazers” often lead the school’s technology movement to favor their needs and desires.

Teachers not affiliated with the technology committee are unaware as well as unclear about the technology plan.

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C. Technology Deployment

14. Equitable Deployment: The equitable distribution and continual monitoring processes to minimize disparity between school levels, classrooms and library media centers.	<h3 style="margin: 0;">Equitable Deployment</h3> <p style="margin: 0; font-size: small;">Target technology rations Asset management and planning</p>	<p style="font-size: x-small; margin: 0;">Not in Place Emerging Dev. Optimal</p> 
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In general all students and staff have access to technology, some classrooms have multiple workstations, all classrooms have computers with Internet access, labs are available for individual student and entire class use. However, statistics related to equipment deployment derived from site visits and interviews verify the lack of equitable deployment throughout the schools.

Sample classroom computer data	Sample student : computer data	Sample computer lab data
1 up-to-date computer in every classroom	2-5 students per standard workstation.	Computer lab with 22 computers
1 computer in each classroom for teacher use.	3 students per workstation in the upper grades	Two computer labs, each with 32 computers.
1 to 2 computers in 90% of classrooms	6-9 students per workstation in the average classroom	One cart of 10 laptops for teachers to checkout.
1 to 7 computers per classroom	7-10 students per standard workstation in each classroom	25% computers in computer lab and 75% in the classrooms.
2 or more computers in most classrooms	10 students per workstation in each 4 th & 5 th grade classrooms	One computer for two students (K-3) in library media center.
3-4 working computers per classroom	10-20 students per standard workstation in the classrooms	
4-5 computers per fourth and fifth grade classrooms	10-24+ students per standard workstation	
5-8 computers, a scanner, and printer per classroom	10-30 students per workstation in the classrooms	
6 computers in certain classrooms while most classrooms have one	25+ students per workstation most classrooms	

As additional technology arrives at a site, it is placed where it is in greatest need as often as possible. Equity issues are acknowledged but exist due to lack of space and funding. During interviews it was stated that there is a great disparity between school sites in terms of deployment of up-to-date equipment. Equity issues exist for special populations, grade levels and content areas. The equity issues are acknowledged but perceived to be a site problem to resolve. Equity is usually addressed by spreading equipment equally among all classrooms. Computers are inconsistent from room to room and even within one classroom (some do not support sound, CD-ROM, etc.) “The problem is that we cannot use the same software for all the computers.”

When asked during interviews what happens to out-dated equipment, there is no knowledge of a plan to replace or repurpose equipment as it ages, “once you get it, its yours forever and you don’t ask for anything new for awhile” are the feelings felt by some teachers.

During interviews administration and staff recognized the need for improved District funding to facilitate equitable deployment and the need for improved deployment of existing equipment to facilitate more effective usage. Teachers interviewed spoke of the difficulty of using technology for instruction with a ratio of more than the preferred five students to one computer ratio. Several schools expressed concern that equitable deployment of technology is recognized, but considered a site-based rather than a District problem.

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Strengths

Equity among grade levels exists at several schools.

When multiple computers enter the site, the staff decides as a whole the best placement for the technology.

Whole class instruction can be delivered in the computer labs at many schools.

Limiting Forces: What needs to work better?

No system-wide asset management and planning are currently in place and limited replacement, repurposing, and donation policies exist.

Major equity issues exist between classrooms. These issues are not presently being adequately strategized.

Classrooms may have multiple computers, but half of them may be obsolete.

There is no policy in place for equitable deployment of equipment throughout all district buildings.

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C. Technology Deployment

15. Ubiquitous Access: The availability and organization of technology tools around learning and working needs.	<h3 style="margin: 0;">Ubiquitous Access</h3> <p style="margin: 0;">Adequate technology ratios Distribution patterns Mobility/flexibility of equipment Access policies/practices</p>	<div style="display: flex; justify-content: space-between; font-size: small;"> Not in Place Emerging Dev. Optimal </div>
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Equipment is distributed among classrooms, the school library media center, and technology/computer labs at every school. The number of computers in each classroom varies from one computer to up to eight computers. In some instances the single classroom computer is reserved for teacher use (up to 90% of the time at a few schools). Many elementary classrooms still have only one or two computers, with sometimes only one of them connected to the Internet. If multiple computers do exist in a classroom at the secondary level, it is common for one of them to be dedicated for teacher use only. All classrooms are equipped with a television and VCR. Presenter boxes which project computer images onto the television are installed in many elementary classrooms. Classrooms at each school have other equipment like laserdisc players, scanners and printers. The number of computers placed in lab settings ranges from less than ten, when space in the media center is limited, to up to 38 computers when it is necessary to accommodate large class size. The proportions of computers in classrooms and in lab settings vary. One school has all but five computers in classrooms and other schools have all newer computers in the lab setting.

At nearly all schools current classroom equipment ratios do not adequately support the designated learning outcomes. During interviews teachers and administrators defined their ideal environment for “ubiquitous access” with the following statements:

- “Equipment ratios adequately support all designated learning needs and outcomes.”
- “Equipment distributed to labs, classrooms , and other learning areas in adequate ratios for anytime, anywhere learning.”
- “Mobility and flexibility of equipment is high.”
- “Access obstacles are solved enabling most students to learn or work when they choose.”

Equipment ratios need to provide students with access whenever and wherever the instructional need occurs.

During site visits mobility and flexibility of equipment was observed to be limited at most schools. A few computers are on carts, but teachers need to plan in advance to move them; in other instances all computers are immobile. Many classrooms are not set up for group work. Most computer lab configurations are designed for individual student use. Computer labs have some unscheduled time available for open access but as much as 95% of the computer lab time is occupied by a predetermined schedule. Some equipment, such as AlphaSmart keyboards or a cart of ten wireless laptops, is available for use in classrooms through a checkout system at the school.

Obstacles exist for many students because they cannot choose when to work in the tech/computer labs. Usually students do not have access to computers unless previously planned by teacher for extra computer lab time. Students have access to the computer lab during recess at least two days per week at several schools. Students are able to accomplish only a limited amount of projects during limited scheduled computer lab sessions. All teachers and the principal at one school interviewed expressed need to continue to maintain a computer lab at the site. However, in another interview a teacher at another school stated that her students have access to anytime, anywhere technology enriched learning in her classroom since the computers at her school are distributed to classrooms and not installed in a computer lab. The ongoing debate related to computer lab versus classroom placement of equipment continues several schools in the district.

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Policy at most schools states that students may not use tech/computer lab unless an adult is present; at one site free time in the computer lab is restricted to lunch and one day after school. Time in the lab is often not available after school or during recess. The computer lab shares space with the library at six elementary schools and time is scheduled jointly with library time. There are limited time slots available beyond the 60 minutes per week per class for combined computer/library time. "Whenever I need to use the library's learning center I can." as per one teacher's interview. When library media center is not in use, teachers can sign up to use it at most schools but the technology aide is not in the computer lab at all times. As one interviewee described "The computer lab goes unused on Friday because there are no classes scheduled and no support staff present." Two teachers in separate interviews report a reluctance to schedule computer lab time for students because it is "scary" to do so without support staff present. Another school's technology lab is available and accessed easily due to the presence of full time support staff.

Current practice places a majority of the technology purchase decisions upon the budget of each site. During interviews it was discussed that there is a great disparity between school sites in terms of deployment of up-to-date and functional equipment due to uneven funding. Principals and teachers recognized the need for improved funding to facilitate equitable deployment district-wide.

Strengths

The ratio of students to computers has improved during the last three years.

The need for ubiquitous access to technology is recognized, but perceived to be a site-based, rather than a district, issue.

Limiting Forces

Inadequate mobility and flexibility for equipment exists at all schools.

Computer labs and laptop carts are not fully in use due to inadequate support staffing

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C. Technology Deployment

<p>16. Tool Capacity: The range of technology tools and software used as well as their capacity to meet standards of high performance.</p>	<p style="text-align: center;">Tool Capacity</p> <p style="text-align: center;">Access to a Range of Tools Hardware/software standards Aging Inventory</p>	<p style="text-align: right;">Not in Place Emerging Dev. Optimal</p> 
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Most school sites possess a variety of technology tools and students have access to technologies other than computers. Every classroom has a wall mounted TV and VCR. Another common peripheral is a classroom printer. Many classrooms at the elementary and intermediate levels are equipped with a Flexcam connected to the classroom television. The ratio of students per peripheral (digital cameras, scanners, etc.) ranges from a high of 200:1 at several schools down to 75:1 at other schools. One school is working toward ratios of at least one peripheral (scanner and digital camera) to every 100 students. Another school has installed a scanner in every classroom. Classroom peripherals include the following:

Digital Cameras	One per grade level	Digital camera on site at most schools
	Two units on campus	Several digital cameras on campus
	Three units on two campus	One digital camera available for checkout
Color Laser Printers	One networked unit in LMC and/or school office at most schools	One networked unit in tech/computer labs at several schools
Laser Printers	At least one networked unit in LMC at most schools	Many classrooms have at least one small laser printer
	Several units distributed throughout campus at several schools	Classrooms with more than one computer share one classroom printer
Scanners	One per classroom at one school	At least one in each tech/computer lab at each school
	One per grade level at several schools	Several units distributed throughout campus

Other peripherals found at some schools include Dreamwriter or AlphaSmart keyboards, between 10 to 50 units per school. At least one video camera exists at each school. Intermediate and high schools are each equipped with a video communications lab for students use. Some schools have acquired CD burners and a SmartBoard interactive whiteboard. However, peripherals such as probes for scientific measurements are not widely available.

Students and teachers use software that is preinstalled on computers or software licensed by the school district. At several elementary schools all computers have Type to Learn keyboarding software, KidPix graphics software, and Inspiration graphic organizer software. Other software that supports current curriculum is found in tech/computer labs. Teachers at one school stated interest in purchasing more software for students to use in the lab and in the classrooms. Technology committees purchase software for computer labs to support their curriculum based upon desires of grade level teams. Some staff view these actions as “shopping sprees” for additional software titles since there is no cohesive plan for software acquisition. One teacher stated “Lots and lots of titles purchased without rationale or use of a formal review process”. Content-based software has not been identified and no site plan or district money exists to fund and purchase new software at several schools.

Networks exist at all school sites and Internet access is available in nearly 100% of district classrooms. Students can access research materials online when they are needed while the students work on research projects or other class assignments. At most elementary schools students have access to the media center only during scheduled weekly visits unless the teacher schedules extra time. Hardware standards are identified and posted on the district web page and most schools are working towards meeting these standards. However many staff members are unaware of hardware standards.

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As a result of Digital High School funds the high school now contains many new computers and software. Recently opened schools have new (0-2 years old) hardware purchased by the school district. Aging equipment is a problem at other schools. Comments related to aging inventory were heard during interviews at numerous schools:

- 0 - 25% aging inventory at one school
- 25 - 39% of computers are aging at several schools
- 40 - 60% of hardware is considered aging at two schools
- 50% of the classrooms have at least one computer that sits unused due to age or disrepair
- 60 - 100% of all hardware is considered aging at one site
- 90% of one school's equipment is aging or in need of replacement

Strengths

Peripheral equipment is available for check out by teachers at many schools.

Most classrooms have a variety of technology tools in addition to computers (scanners, printers, etc.)

District-wide procedures in place for hardware acquisition.

Software tools (application software) are standardized for all new computer purchases.

Limiting Factors

Technology tools are aging and need repair

Teachers cite a need for additional software titles.


The ratio of technologies, other than computers, to students needs to be lowered.

Peripheral technology tools are utilized mainly by specialized classes or departments.

No cohesive plan for curriculum software acquisition is in evidence.

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C. Technology Deployment

<p>17. Connectivity: The universal access to local and global resources by students and staff.</p>	<p>Connectivity</p> <p>Global networks Robust/stable networks Internet access distribution</p>	<p>Not in Place Emerging Dev. Optimal</p> 
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The district began installing network wiring in schools and classrooms in 1995. The project was completed in 1997. As new schools were opened or additional classrooms added to campuses, additional infrastructure was installed. During site visits and interviews the extent of connectivity at each school was confirmed. According to interviews and observations, most classrooms have Internet access. The following statistical data captures the current status of network connectivity throughout the school district.

Current Status	Supporting Data
Network is stable and dependable	At least 70-90% of the time at five schools
Classrooms (at least one computer) and computer labs are connected to the network	Reported at 100% for 12 school and approximately 90-75% at two schools

Although this data exhibits extensive connectivity at all schools, there are several instances of connectivity limitations. Teachers and students have access to the Internet in the classroom as well as in the computer labs. Teachers can access Internet and e-mail from at least one computer in their classrooms, but classroom computers are limited to teacher use at the intermediate level. During site visits it was determined that 10-25% of teachers do not access e-mail from their classrooms. Internet access is available and pervasive in essentially all classrooms; however, Internet access is available to students primarily in the library media centers or in computer labs at several sites.

Periodic disruptions in connectivity impact school operations and classroom instruction. One teacher commented: "It is hard to plan a computer project because the network might be down during our computer lab time." A few schools have experienced network problems often enough that one principal ranks the network as "frequently unstable and not dependable." Instruction and learning with technology resources become undependable and frustrating for teachers at these schools. The modernization projects currently underway at several schools causes further interruptions to network access. The interim housing classrooms do not have network connections and the construction itself causes lapses in network access.

Strengths

Teachers use shared files on the local file server at several schools.

All teachers have access to e-mail at all schools.

Every teacher gets a daily e-mail from the principal at several schools.

Most computers in all classrooms are connected to the local and wide area networks.

Limiting Forces

Networks are occasionally unstable and not dependable which causes disruption of instructional program when the Internet connection is down.

When the network is not working it usually takes an extensive amount of time for it to be repaired or "go back online".

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C. Technology Deployment

<p>18. Technical Support: The availability and responsiveness of software, hardware and network support when needed by clients.</p>	<p align="center">Technical Support</p> <p align="center">Optimal Technical Service Adequate, Qualified Personnel Ratios Client-Focused Services</p>	<p align="right">Not in Place Emerging Dev. Optimal</p> 
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Maintenance and repair is provided by district level personnel and on-site support staff at each school. Off-site technicians are available on a regular schedule and on site technical support is provided by at least one part time technology aide and “expert” teachers. The technicians try to take care of as many problems as possible during each visit. During interviews teachers stated that the technical support staff is knowledgeable and hard-working. The following chart summarizes the current status of technical support personnel:

Personnel	School Assignments	Frequency of Support	Approximate number of computers supported
Technician A	9 elementary schools	Once every other week	Between 80 and 130 per school; total: 725 computers, 225 printers
Technician B	3 intermediate schools, 1 elementary school	Once a week at the intermediate schools, once every other week at the elementary school	Between 140 to 150 per Int. schools; 90 at the Ele. school; total: 517 computers and 170 printers
Technician C	High school and continuation school	Daily at high school; as needed at continuation school	670 at high school; 30 at continuation school; total: 700 computers, 115 printers
Technology Aides	At least one per school	Combined Tech Aide assignments at each school range from 12 hours per week to 34 hours per week	

The level of technical support has not kept pace with the demand to support more equipment and additional school sites. Each school augments these services in a number of ways; one teacher commented “We fix our own stuff a lot.” Staff is flexible when dealing with computer problems. Several schools use local funding and hire an additional part-time person to address site needs. Other staff, parents, and students help maintain equipment at sites the best they can when the technology staff is not available. Innovators at sites who possess trouble-shooting capabilities aid staff in solving technology problems and many teachers feel they can get assistance from other knowledgeable staff on site when questions or problems arise. During interviews teachers stated that they often try to fix problems themselves because off-site personnel are unavailable. Every teacher spoken to said that the technical support needs to increase. One teacher said, “Technical support needs to be assigned on site.” At least one school expressed satisfaction with on site support but acknowledged frustration in the wait time for district support.

Several schools use a sign-up board where technical problems are listed and fixed when technical support is on campus. The school has a log in place for teachers to document technical problems in their classrooms. However there is no tracking of equipment down time at most schools. Recently the advent of a new operating system has made installing software difficult. At one school two teachers have been identified to staff members as being particularly technology-savvy, and listed, along with the Assistant Principal, as resources for technology questions. The following comment was made during an interview with the school principal: “My worst fear for learning and technology is that things won't proceed because of technical problems. Teachers not comfortable with technology are not willing to take a chance if it will not work.”

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However the level of frustration caused by inadequate technical support is high at nearly all schools. 100% of staff at one school feels that technical support is one of the main negative contributors to not using technology. Current technology personnel are extremely overloaded with maintenance requests. Response time for most problems can be longer than two weeks. At times, a district technician needs something to resolve an urgent problem elsewhere so teachers are forced to wait another two weeks. Teachers have given up on technology implementation due to the lengthy technical support response time. There is a lack of confidence in the technical support system and some teachers feel equipment is not reliable enough to use on a regular basis. Technology use equals frustration in the eyes of many people interviewed. During interviews staff stated that off-site personnel was scheduled to cover too many sites making management of tasks very difficult.

Strengths

Knowledgeable personnel from the district provide maintenance and solve problems.

Part-time support is available on each campus.

Logging in of work completed by technician has begun at one site.

Limiting Forces

Inadequate district level and school level personnel result in extended response times, generally more than a week at most schools.


No continuous cycle for replacement of equipment exists.

Instruction and learning with technology resources that are not dependable is frustrating for many teachers.

Several teachers identified unreliable technology and lack of technical support staff as reasons for not relying on technology for classroom lessons.

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D. System Capacity

<p>20. Collaborative Decisions: A coordinated, client-focused, collaborative process of decisions tied to instructional outcomes.</p>	<p style="text-align: center;">Collaborative Decisions</p> <p style="text-align: center;">Collaborative Processes Client-Focused Criteria Used Cost-Benefit Analysis Used Coordinated Purchases</p>	<p>Not in Place Emerging Dev. Optimal</p> 
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Decisions on technology purchases are collaborative and usually involve members of the technology committee, PTA, and School Site Council. The technology committees, which meet regularly at several schools, are comprised of teachers, administrators, and parents who are charged with making decisions regarding implementation of technology. Whereas the technology decision-making process is collaborative among principals and teachers at most schools, at least four schools indicated no collaboration for decisions regarding the cost/benefit analysis of proposed purchases. In some instances individuals decide for themselves and/or for others. A varying percentage of staff is not involved in decisions regarding equipment purchase at each school.

Several schools stated that decisions regarding technology come from the district or from a technology committee at the district-level that makes decisions without the input of all. Technology decisions are based primarily on each school's budget and discretionary funds. Technology decisions do not presently consider the total cost/benefit analysis of purchase. An attitude of "buy now, worry about funds for replacing later" exists among the staff and parents.

In addition to the collaboration on technology acquisition decisions at most schools, teachers work together to share ideas on projects, to develop units of study involving adapting and transforming uses of technology, to define school-wide policies and implementation strategies, and to participate in collegial tasks across subject matter and grade levels. All teachers at one school are involved with inquiry-based learning and discuss experiences on a regular basis. During interviews "trailblazers" stated that they take the time to collaborate with others about technology. One teacher shared that "The most valuable experience with technology would be "sharing with other teachers by grade level at our own site or with intra-site teacher sharing meetings."

Strengths

All stakeholders are included in planning and decisions are discussed at staff meetings at most schools.

Innovators and interested individuals take the initiative for technology decisions and seek the required approvals.

Limiting Forces

Decisions are based mainly on equipment and software, rather than equitable usage or instructional practices.

Technology decisions tend to be equipment based.

Consideration of the total of cost ownership for equipment upgrades and staff development is given little consideration.

Collaboration and decision-making between district and schools needs to be improved with more consistent communications.

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D. System Capacity

<p>21. Staff Development Program: The content, processes and context (NSDC Standards) to effectively support and sustain expectations for staff to deliver students results.</p>	<p>Staff Development Program Expectations for Skills/Practices Identified Measured Data-Driven for Student Results Content of Learning Processes for Implementation Context of Skill Development Sustainable Elements</p>	<p>Not in Place Emerging Dev. Optimal</p> 
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The district provides a variety of staff development focusing on technology literacy skills for teachers. During interviews teachers stated they liked the district-funded and supported optional workshops where teachers learn about specific technology tools rather than classroom usage and instructional practices. Other interviewees said that they gain some skills through coursework taken on their own time or that they gain their skills primarily through practice or from other individuals. Approximately 60% of the staff at one school participates in technology staff development and 90% of the staff at six schools expresses the desire for more staff development. 60% of the teachers at another school have done little or no staff development in technology. One school indicated that all teachers have participated in the same staff development.

Staff development is offered in a variety of forms:

- expanded options for learning including real-time coaching/reflecting on-site
- focus on hardware and software with no intention of changing pedagogy
- “Just in time” learning
- paid inservice is offered after school
- how to use a new tool to make a new product
- option to sign up for any class in which they are interested
- workshops and classes offered at other local educational institutions
- on site teachers assist other teachers who need help with basic computer skills
- learning how to use software and incorporate it into the curriculum
- learning how to vary or adapt current instructional efforts for technology use

Optional classes focused on technical skills are available for staff through the district mainly during the summer. Site “experts” are planning to set up voluntary staff development that addresses teacher and student needs. Staff works with each other to develop the skills and practices necessary. Technology Teacher Interview: “When people need help they need it now. I try to support them in that manner as much as possible.” 100% of all staff interviewed staff development as #1 problem so far with implementation any technology in the classroom. Staff is willing to try new resources when supported with sufficient staff development. During interviews staff stated that training in both technology skills and classroom applications were needed. District in-services have not yet focused on the transforming uses of technology. Development of skills and uses of technology as tools in the learning process are optional. During interviews teachers expressed the need for more staff development during the school year. No new instructional practices for technology are identified, expected or measured for specific student results and no data is collected on student results as a result of staff development. A larger percentage of the technology budget should be designated for staff development.

Strengths

The district provides a variety of staff development focusing on technology literacy skills for teachers.

During the summer of 2001, a cadre of teachers participated in an extended staff development program on information management which serves as a model for future staff development programs.


Limiting Factors

Staff development is not always relevant to student learning needs.

Teachers are not required to attend workshops or in-services on educational technology

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D. System Capacity

<p>23. Communication/Marketing: The on-going, regular communication and marketing of successes focused on learning results as well as statistical information of progress.</p>	<p style="text-align: center;">Communication / Marketing</p> <p style="text-align: center;">Frequency of communications Varied media Anecdotal and statistical learning results reported</p>	<p style="text-align: right;">Not in Place Emerging Dev. Optimal</p> 
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All schools use communications to inform and involve parents and the community. Schools throughout the district use a variety of traditional and electronic means of communications. At least two media are consistently used for this communication. There is a high frequency of communication with parents at every school. Communication/marketing to inform and involve the community is sporadic at only a limited number of sites. Schools and individual teachers may use flyers, student newspapers, monthly newsletters, websites, email, telephone, and voice mail to communicate with parents. Sporting events and other school activities are televised on the local cable channel. One school uses monthly meetings for parents to provide communications concerning school programs and activities. One of the most effective means of communicating with parents occurs when students communicate their learning to their parents. Technology uses are not usually a pervasive subject in regular communication with parents.

Each school is utilizing web pages as a means of one-way communication with parents and the community. The district web site links to school and teacher web pages. At one school more than 80% of the teachers have homework websites and more than 60% update these websites regularly. The district website has links to more than 115 teacher web pages that are updated periodically by many of the teachers. The school websites receive positive reaction and responses from parents. Every effort is made to keep the school and district websites current and up to date. Of the 15 school websites, 12 of them have been updated within the last month. Many teachers participate in two-way communication with parents through email; better email communication between teachers and parents was mentioned during site visits.

Communication about technology is limited to stories, announcements of PTSA / PEF functions and donations, and one-way (school to community) notices of special events. Communication about the impact of technology is focused more on equipment acquisition, technical and instructional efforts rather than learning results. 50% or more of parents at several schools are focused on the technology being done and not the learning of content.

Strengths:

All stakeholders recognize the need for communication with the community and marketing of each school's technology goals.

Teachers' use of homework websites, email, and voice mail to communicate with parents is increasing.

Communication exists to inform; a variety of media is used to consistently inform the community.

Limiting Forces:

Limited communication about technology's impact is evident at this time.

Conversations among teachers, and between teacher and parent, tend to focus on the "stuff" and effort in utilizing the equipment that is available. Little conversation focuses on student learning results that come from the use of technology.

Less than 30% of teachers at some schools use district email for professional purposes.

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D. System Capacity

<p>24. Assessment/Evaluation: The assessment, evaluation, and reporting systems that are co-developed with stakeholders to monitor added-value and report progress of system's capacity as well as targeted instructional results.</p>	<p>Assessment Evaluation</p> <p>System/instructional evaluations Specific, measurable goals Assessment strategies identified, supported and implemented Regular data collections are resources/used and reported for on-going decisions</p>	<p style="text-align: right;">Not in Place Emerging Dev. Optimal</p> <div style="text-align: center;"> </div>
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The school district appears is successful in educating its students as substantiated by consistently high standardized test scores and a high school graduation rate of nearly 100%. In addition, the majority of students continue their education after graduation. The success of the instructional program is evidenced by these indicators.

Interest exists among teachers regarding utilizing technology for educational and instructional goals, yet no formal assessment/evaluation plan is in place at this time. Teachers work with each other to find and try new ideas; they also continuously evaluate the effectiveness of these ideas. Students evaluate how they did and how they can improve through student self-evaluation in some instances. Teachers describe assessing student work for effort or according to traditional measurements. Usually teachers assess student performance through rubrics, observation, and checklists. Occasionally students help develop rubrics used to evaluate their products. At most schools assessment of learning is traditional (performed only by teachers). Teachers and principals did not identify any rubrics or means of specific assessment when it came to the use of technology and the difference it makes in student learning.

Although student performance is evaluated and assessed on an ongoing basis at the classroom level, no process is in place to assess or evaluate the value of technology in meeting instructional goals. Learning and technology assessment strategies are vague or it is assumed that traditional measurements will be used. Data collection practices for the use of technology can be described as ongoing at some schools, tailored to fit a specific need, and usually collected via surveys. Projects are evaluated on what worked and what can be improved upon. In most cases student achievement results are not measured continuously against base line data and there is limited opportunity for staff collaboration on student assessment. Assessment is informal, the goals commonly focus on the acquisition of technology skills. Teachers do not have expectations on where their students need to be with technology. During interviews it was noted that instruments for measuring transforming uses of technology must be adopted as the transforming uses are developed. Teacher comments include, "How can I assess them when they know more than I do?"

System level assessment related to technology is informal, neither coordinated nor quantified, and not regularly documented. Some schools report the absence of a district wide evaluation at this time. No generic instructional technology evaluations are in place at many schools; assessment strategies are not identified, supported, or implemented. No systemic data collection processes are in place for instructional technology evaluation and on-going decisions at this time.

Strengths

General instructional assessment strategies are in place.

Teachers stated that they would know they had been successful in combining technology and learning for students by the confidence and knowledge students exhibited on the computer.

Assessment is based on the knowledge learned not on the "technology skills" employed.

Limiting Forces

Little evaluation of the effectiveness of technology exists.

Desired student results are identified after the fact and attempted to be measured without baseline data.