1998/2000 Update
Kentucky
Master Plan for Education Technology

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Preface

The *1998/2000 Update to the Master Plan for Education Technology* explains the progress which has been made toward implementation of the Kentucky Education Technology System in the 176 public school districts.

The Update sets forth the strategic priorities for the upcoming biennium and introduces new initiatives.

The Update incorporates by reference the original *Master Plan for Education Technology* as adopted in 1992 as well as the 1996 Update.

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Kentucky's Learning Goals

Schools shall develop student's ability to:

GOAL 1: Use basic communication and math skills for the purposes and situations they will encounter throughout their lives

GOAL 2: Apply core concepts and principles from mathematics, the sciences, the arts, the humanities, social studies, and practical living situations to situations they will encounter throughout their lives.

GOAL 3: Become a self-sufficient individual.

GOAL 4: Become responsible members of a family, work group, or community including demonstrating effectiveness in community service.

GOAL 5: Think and solve problems in school situations and in a variety of situations they will encounter in life.

GOAL 6: Connect and integrate experiences and new knowledge from all subject matter fields with what they have previously learned and build on past-learning experiences to acquire new information through various media sources.

Highlights of the 1998/2000 Update

The 1998/2000 Update represents a continuation of the original vision and programmatic objectives adopted in the1992 *Master Plan for Education Technology*. Data analyses and status reports on major programmatic components continue from those included in the 1996 Master Plan Update. The 1998/2000 Update introduces the concept of a biennial Master Plan Update to coincide with the state budget cycle.

The thrust of the Update is threefold:

Identification of new issues arising from experience gained during a five year implementation, the majority of which address the transition from implementation to operation and activities requiring recurring expenditure and support;

Recognition of federal programs and other external factors which are impacting Master Plan implementation; and,

A continued and strengthened emphasis on the preparation of teachers to use technology effectively, which includes the issue of program evaluation.

New Issues

The 1998/2000 Update calls for the inclusion of about $68 million total state and local funds biennially as unmet need to support the recurring costs of equipment replacement, operational expenditures, and capacity upgrades. The Update identifies for the first time in line item detail all recurring costs associated with ongoing support of the program as well as the funding source for each.

- This Update incorporates the first major revisions to architectural standards and declares older computers obsolete so that the districts' unmet need can be updated to include the cost of replacement.
- The Update includes recurring costs to replace aging technology which no longer meets minimum architectural standards. The Update also includes recurring cost to replace or increase capacity on networking components based on usage thresholds.
- The Update supports for the first time the use of trust funds (up to ten percent (10%) of the annual offer) for emerging technologies, routine maintenance, and other previously ineligible technology costs by districts who have achieved a level of implementation equal to or greater than the statewide average of progress towards Master Plan implementation. To be eligible districts must also have met thresholds for: appropriate professional development; and, the provision of assistive/adaptive technologies to special populations.
- Within the introduction of recurring costs, the Update identifies funding requirements for state-level expenditures to support professional development, the backbone network, the Help Desk, the district administrative systems, research, and other state provided services as specified in the Master Plan budget. Should these recurring costs not be approved for state expenditure, the costs for these items would shift to the districts.
- The Update calls for re-evaluation of district and school administrative system requirements which were referenced in the 1992 Plan but which are outside the

scope of the standard financial management system (MUNIS) or for which state price contracts have not been established. Examples are: food service, transportation, and facilities management.

Federal Programs and External Factors

The Update discusses the impact of federal programs, such as the Technology Literacy Challenge Fund and the Universal Service Fund, on Master Plan implementation.

The Update addresses the integration of technology planning into the new Consolidated Planning process and the anticipated impact of that linkage on understanding technology's role in teaching and learning.

The Preparation of Teachers and Program Evaluation

The Update contains several recommendations to strengthen initiatives for the preparation of teachers to use technologies effectively, clarifying the principle that the appropriate use of technology in every classroom, in every area of the curriculum, and with every age level is not an option.

The Update changes the manner in which the unmet need for technology professional development for teachers is defined and budgeted. The unmet need will now be calculated on the basis of one-hundred (100) dollars per teacher annually which generates a statewide recurring need of $8 million biennially. This effectively doubles the amount districts will spend on preparing teachers to use technology well.

The Update reviews principles of good practice and highlights strategies which have proven effective.

The Update identifies research initiatives on the impact of technology in Kentucky classrooms and describes the state's agenda for continuing investigations.

"It isn't just a question of figuring out how to put technology into classrooms. It's a question of clarifying educational goals, reconceptualizing how you orchestrate teaching and learning activities, and altering the way you assess students and teachers."

Martha Stone Wiske, Co-Director
Educational Technology Center
Harvard University Education Letter
December 1997

Overview: The Master Plan for Education Technology

Implementation of *Kentucky's Master Plan for Education Technology* began in 1992 after formal adoption by the Kentucky Board of Education and the state's General Assembly. In 1993, the total *Master Plan* cost was placed at just over $553 million to reflect the actual total cost of taking the network into every classroom. Just over five years into implementation, with the 1998/2000 Biennial Update, $68 million biennial recurring cost is introduced to cover operational costs, equipment replacement, and incremental upgrades to increase computing and telecommunications capacity in the schools. This is a cost shared equally by the state and local districts.

The *Master Plan* describes how technology will be used to improve teaching and learning for every Kentucky child as a component of a much broader systemic education reform:

- To ensure equal access to technology for all students, teachers, and administrators
- To enable students to use technology to become independent life-long learners
- To empower teachers to use technology as a tool
- To develop a network for voice, video, and data that will connect all computers in every classroom, school, and district to global networks
- To prepare Kentucky's children to work in the Information Age

These visionary principles, which formed the foundation for the Master Plan in 1992, have been widely adapted today and are found in the technology plans of most states.

They are also clearly articulated in the four national goals for technology in education:

"All teachers in the nation will have the training and support they need to help students learn using computers and the information superhighway;

All teachers and students will have modern multimedia computers in their classrooms;

Every classroom will be connected to the information superhighway; and

Effective software and on-line learning resources will be an integral part of every school's curriculum."

President Clinton, "Getting America's Students Ready for the 21st Century, Meeting the Technology Literacy Challenge," A Report to the Nation on Technology and Education,

June 29, 1996

Like these national goals, Kentucky's goals for technology in the schools are fairly straight-forward. While deployment is easy to measure, impact is not. The continual challenge for all stakeholders is the articulation of local, state, and national strategies which will effectively and continually assess, refine, and sustain technology's role as a vital component of school reform.

- From Fostering the Use of Educational Technology, Elements of a National Strategy, Rand Corporation, 1996

The introduction of educational technology into schools should occur as a component of a broader effort of school reform to improve the learning of all children. Technology without reform is likely to have little value; widespread reform without technology is probably impossible.

Over time, the costs of educational technology should be built into school budgets as a normal component of recurring costs. Major responsibility for financing and implementing technology clearly lies with state and local school authorities.

Public authorities at all levels should work with the private sector to see that all schools have access to the national information infrastructure at reasonable costs.

All levels of government should monitor the access to technology that exists for traditionally disadvantaged populations and be prepared to do what is possible to ensure equality of access

Technology should not be something added to the margins of school life; each school must make significant changes.

Equity and Equitable Access

In 1989 the Kentucky Supreme Court declared the entire system of education in Kentucky unconstitutional:

"The system of common schools must be substantially uniform throughout the state. Each child, every child, in this Commonwealth must be provided with an equal opportunity to have an adequate education. Equality is the key word here. The children of the poor and the children of the rich, the children who live in the poor districts and the children who live in the rich districts must be given the same opportunity and access to an adequate education. "

Kentucky Supreme Court decision,
Rose v. Council for Better Education, Inc., Ky.,
790 S.W.2nd 186 at 211

This Supreme Court decision established that Kentucky law requires public education to be funded uniformly throughout the Commonwealth. In response to the Supreme Court decision, the General Assembly enacted the 1990 Kentucky Education Reform Act to establish a new system of common schools based on equity and adequacy. As part of the Reform, the General Assembly provided legislative authority and funding for substantial investment in the area of education technology.

[Note: The Kentucky Revised Statutes cited below and in other parts of this document may be viewed online.]

Through KRS 156.666(7) and KRS 156.670, low income and high income districts in Kentucky have equal access to technology funds, equal access to the same high quality of service, and equal buying power for every dollar.

KRS 156.160(1) stipulates that the Kentucky Board of Education has a statutory mandate to prescribe standards which school districts shall meet. Among these are standards for the "acquisition and use of educational equipment for the schools," (KRS 156.160(1)(b)).

The standards prescribed by the Kentucky Master Plan for Education Technology (KRS 156.666, KRS 156.670(1) and KRS 156.670(7) define specific equity objectives for access to technology which apply to every student enrolled in public schools in the Commonwealth.

These standards apply equally to the entire population of teachers, learners, and administrators in Kentucky's public schools:

- 600,000 students
- 40,800 teachers
- 1,392 P-12 schools
- 176 district offices
- 69 secondary vocational schools
- 700 Family Resource Centers
- Eight Regional Service Centers
- Kentucky Department of Education

The primary objectives for equity and equitable access are:

- One high-performance, networked computer for every six students
- One high-performance, networked computer for every teacher and an ability to access the network from home
- All teachers will have training and support
- Every school with a building-wide, full-function local area network
- Every classroom with at least four to six active network drops delivering data services, Internet and email
- A cordless phone in every classroom
- Video in every classroom
- Instructional software available to every desktop from the network
- Every school directly connected to the wide area network
- Every district office with complete local and wide area networking
- Every district using a standard, fund-based accounting system

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"A recurring theme in Kentucky's school technology plan is equity. . .The state's success in addressing this issue is a major reason why Kentucky is known as a national leader in educational technology."

Jo Anna Natale
Education Week

10 November 1997

As is true for every other aspect of the reform in Kentucky, each school district is held to these same high standards for using technology effectively to support teaching and learning. Schools and districts compare the progress of their technology programs not so

much with each other, as with progress toward the equity objectives and their own objectives for improved student performance and improved school administration.

State and local technology procurements are directly related to these statewide standards. State technology funds must be spent to reduce the access gap and bring all schools to achievement of the equity objectives. Districts are specifically prohibited from spending money for technology in one school where need has been met if another school still has an unmet need for that component remaining.

Currently, Kentucky school districts are relatively uniform in their level of implementation of education technology. Historic technology access gaps between highest and lowest income districts are closing. The extent to which districts are progressing is no longer a function of their relative wealth or poverty.

. . .the Kentucky Education Reform Act is remarkably fair to high poverty schools, and has been from the beginning

Kati Haycock, Director
The Education Trust
Lexington Herald-Leader

28 December 1997

Equity Measures

Access to Funds

Every district receives an equitable share of state technology funds based on average daily attendance.

Access to Buying Power

Contracts are negotiated by the Department for all schools based on the "state-as-one-customer" principle. Contract pricing, payment schedules, and all other contract terms are the same for every school, regardless of volume or location. For instance:

- The cost to connect schools to the statewide network is a flat, fixed cost which is neither mileage nor usage sensitive; and,
- Statewide contracts for instructional software average about 85% below standard pricing for the most commonly used office product tools.

Access to Services

Every district and school have access to the same state-provided support services at no local cost, including 1-800 Help Desk, network management, network engineering consulting, instructional technology consulting, and professional development.

Access to Networks

Since 1995, at least one site in every Kentucky district has been directly connected to the state backbone network at no local cost.

Network connection delivers state-funded Internet access, email, and a range of other services to the district.

Dial-in service is available at no cost to any school without a direct network connection through a statewide 1-800 service or through their local district office.

Access to Computers

The average ratio of KETS-standard computers in the highest income districts is 1 per 9.4 students. The average in the lowest income districts has been reduced to 1 per 10.

As is illustrated in the accompanying chart, since August 1993 the equity provisions within KETS have worked directly and effectively to reduce the technology gaps among districts.
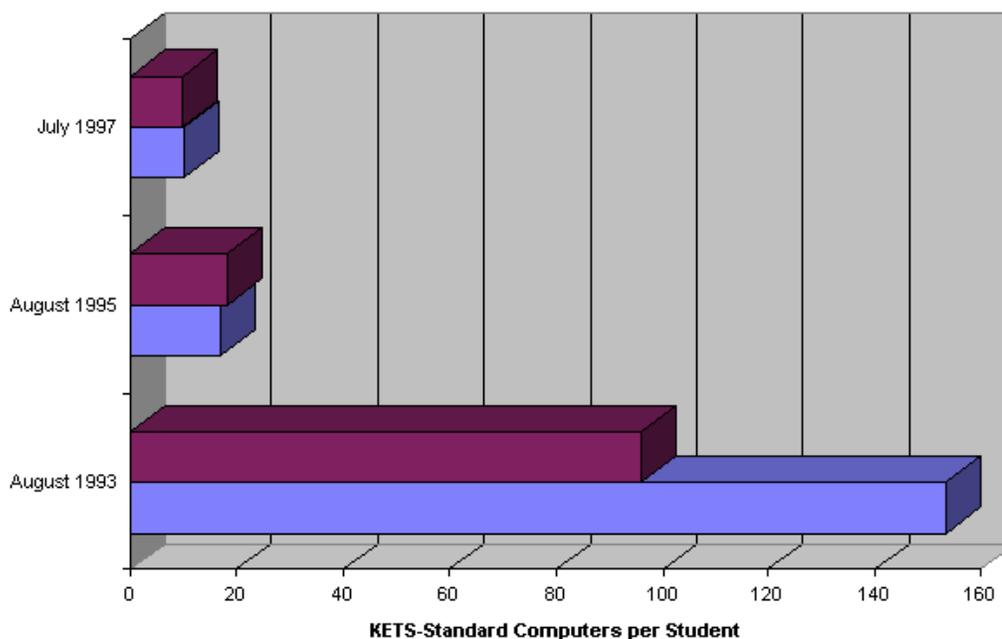
Access for Individuals with Disabilities

In 1993, Kentucky adopted changes to the *Master Plan for Education Technology* which enabled the expenditure of state technology funds on assistive and adaptive technology. Since that time, the Department has actively participated with advocacy groups for the disabled to ensure that all schools are fully cognizant of their responsibility to provide equal educational opportunity as they procure learning technologies.

The Department routinely updates a [matrix of proven assistive/adaptive](#) technologies which schools may procure with state funds to provide equitable access to the instructional network. The Department also promotes national guidelines for providing equitable access to technologies for individuals with disabilities, such as those published by the Office of Special Education and Rehabilitative Services, United States Department of Education.

Funding and Investment

Funding for the Kentucky Education Technology System comes from three sources: the Offers of Assistance state and local match program; 100% state funding; and, 100% local funding. The Education Technology Trust Fund is the source of state funds for the Offers to districts and for 100% state funding. The Trust Fund is a non-lapsing account replenished through biennial appropriations; funds appropriated are credited to the fund and invested until needed (KRS 157.665). All interest earned on the money in the fund is retained for reinvestment. Through the 1996/1998 biennium, state appropriations to the Trust Fund total $143 million.

Offers of Assistance

The Offers of Assistance program is the vehicle through which state dollars are distributed from the Education Technology Trust Fund to local districts. The Offers of Assistance program is established in state statute which says:

. . .To participate in the education technology funding program, a local public school district shall have an unmet technology need described in its local district technology plan and approved by the Kentucky Board of Education pursuant to its technology master plan, and shall match equally the amount of funds offered. (KRS 157.665(1))


Offers of Assistance are distributed to school districts based on Average Daily Attendance (ADA). In each fiscal year, the Department divides the total amount available in the Trust Fund for the Offers of Assistance program by the statewide Average Daily Attendance for the last month of the preceding school year. The result of that calculation is the amount available to all districts per ADA as the Offer. A school district, therefore, is eligible to receive the amount per ADA times the total district ADA each year, as long as an equal or greater amount of unmet need exists.

Each district must match the state offer, dollar for dollar. Local school districts may provide matching funds from local revenues or through acquisition of funds from other sources. A district may escrow all or a portion of the offer for up to three years. Any offer which is rejected goes back into the offers pool for redistribution to other districts. To date, no district has rejected the total amount, or any portion, of an offer.

Levels of Funding Through the Offers of Assistance Program

Through the three biennia of Master Plan implementation, the Offers of Assistance have ranged from $34.85 per Average Daily Attendance to $21.31 per ADA. The 1997/98 Offer per ADA is $24.72.

Offer Per Average Daily Attendance
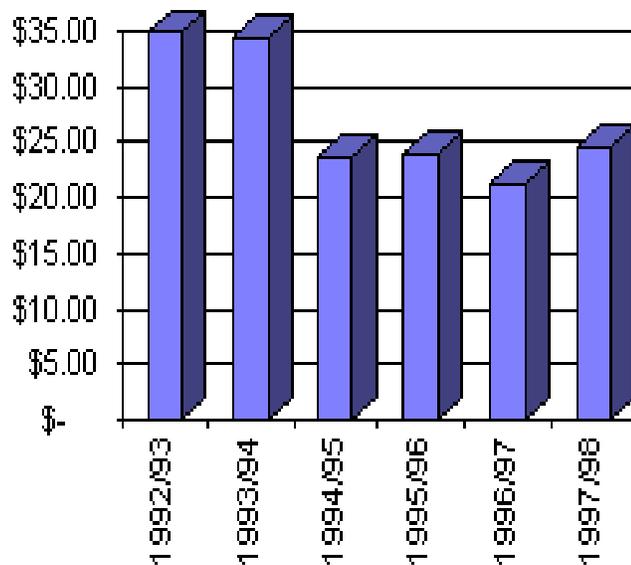
Unmet Need

The concept of the "unmet need" is fundamental to Kentucky's strategy for assuring equitable access to technology. "Unmet Need" means the difference between the local school district's existing technology capacity and the KETS standard established for that item or service. Unmet need, therefore, may be calculated for any individual component of the Master Plan, for any level of the system, for any school, for any district, and at the regional and state level.

Unmet need counts are updated yearly in conjunction with the technology planning process, are reviewed and verified by Department staff, and are approved by the Kentucky Board of Education before the annual Offer can be issued. The Board-approved unmet need calculation forms the basis for the level of state funding for which the district is eligible. When the unmet need for any given Master Plan component is reduced to zero and the current KETS standard for deployment has been met the school district is no longer eligible to receive or spend offers of assistance in that category.
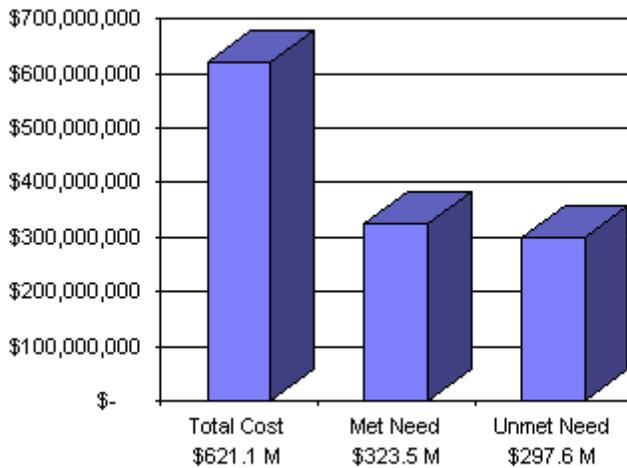
Discretionary Use of Trust Funds

Beginning with this Update of the Master Plan, districts who meet certain implementation thresholds may apply a limited amount of their Offers toward reduction of unmet need in line items previously identified as 100% local expenditures. Districts who have achieved a level of implementation equal to or greater than the statewide average will be able to use up to ten percent (10%) of their annual previously ineligible technology costs. The Department will establish the statewide average implementation benchmark each year based on district planning data effective as of the close of the previous fiscal year (30 June). Districts must also meet thresholds associated with professional development and the provision of assistive/adaptive technologies which will be based on the Consolidated Plan.

The Department will notify districts in the annual notification of offers of assistance if they qualify for the discretionary use provision.

Fully Funding the Master Plan by the Year 2000

Full implementation of the Master Plan by the year 2000 would require a total state appropriation for the 1998/2000 biennium of $127.3 million:

1998/1999	State Funds	Local Funds	**1999/2000**	State Funds	Local Funds
Continuation	$15M	$14M	Continuation	$15M	$14M
New	$25.7M	$19.1M	New	$71.6M	$65M
Total	$40.7M	$33.1M	Total	$86.6M	$79M

Full funding would require 100% reduction of the remaining unmet need in all categories. After implementation is fully funded, the state and local districts will share a recurring annual cost of $35 million - $40 million to sustain the technologies and continue instructional support systems for teachers.

The $298 Million in Unmet Need
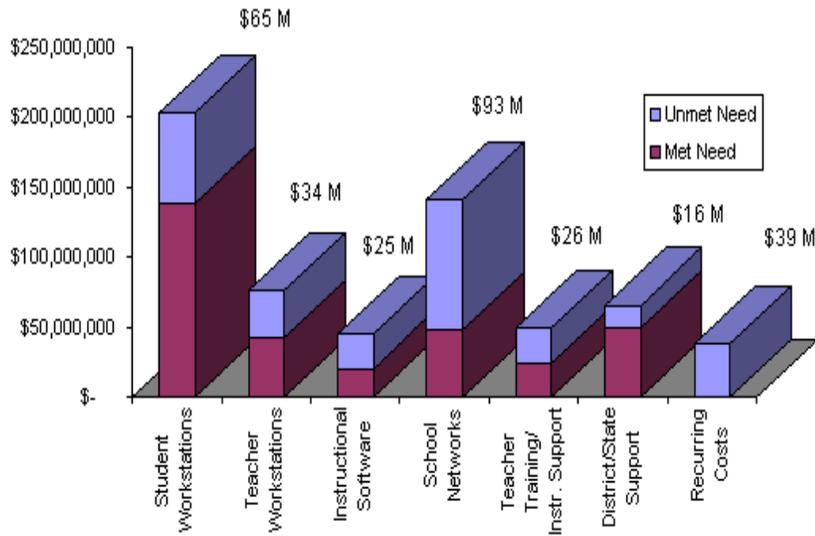
The Investment

The total state and local investment in the *Master Plan for Education Technology* is $323.5 million. This includes local effort above the required match, but does not include federal categorical funds such as the Technology Literacy Challenge Fund:

- $93.5 million in state funds to Offers of Assistance
- $93.5 million in local funds to match state Offers
- $49.5 million in state level expenditures

- $87 million in local expenditures above the required match

The use of these funds is reflected in the chart below. To date, the majority of funds have procured workstations and the investment in networks has begun to grow rapidly.
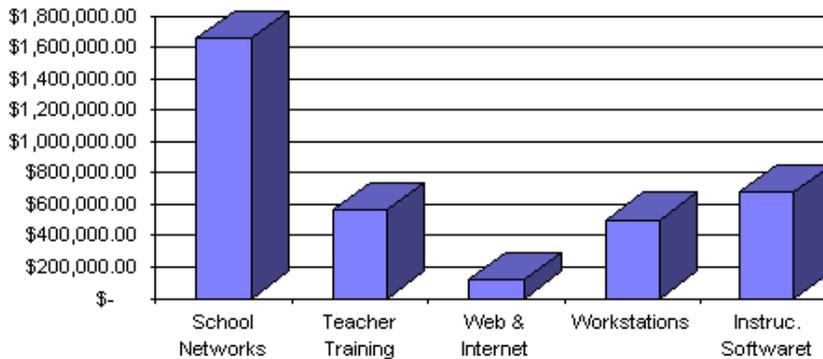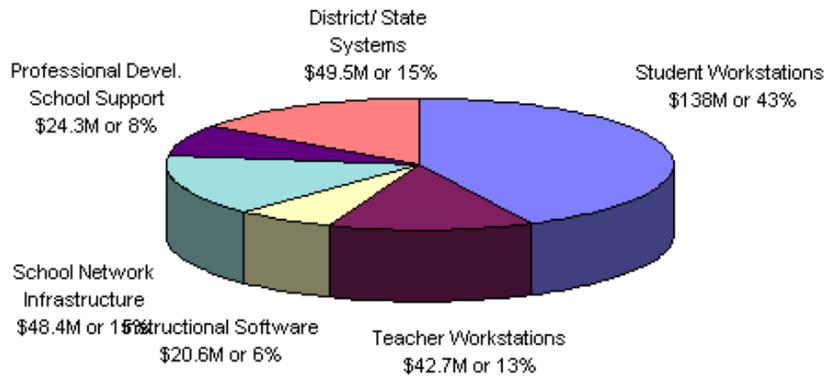
Technology Literacy Challenge Funds

In addition to the state and local funds already invested, Kentucky districts are receiving a total of about $10.5 million in 1997 and 1998 as Technology Literacy Challenge Funds. Because these are federal categorical funds TLCF cannot be used to reduce the unmet need.

Policy and Planning: Statewide Coordination to Support Local Implementation

District Technology Plans

Every Kentucky school district has an approved technology plan in place which describes how the district will implement the objectives of *Master Plan for Education Technology* to support student achievement and school success.

Every Kentucky district must submit and secure approval of an updated plan annually to receive state technology funding. District procurements and implementations are reviewed throughout the year to assist schools and districts and to assure compliance with the plan.

Kentucky's success with district technology planning is unique: every district participates; funding is dependent upon planning; implementation is reviewed against the plan; and, districts are fully accountable.

Since 1994, district technology plans have been created, transmitted, updated, and disseminated electronically. The district technology plan budget replicates the *Master Plan for Education Technology* budget at the local level, facilitating statewide budget coordination, trend analysis, and status reporting.

The Kentucky Education Technology System district technology planning process is an ongoing successful collaboration between the state and local level focused on deploying technology in ways that will increase student achievement and school success.

Master Plan Objectives for Policy and Planning

- Provide continuing in-depth planning with measurable results;
- Provide a uniform systemic approach to administration and instruction;
- Provide continuing training and support;
- Ensure that the infusion of technology is guided by indicators of student achievement and school success; and,
- Select hardware and software based upon research and evaluation.

Standards-Based Procurement

The Master Plan has established standards for equitable access to technology, such requiring at least one workstation for every six students. Together, state and local staff formulate two related groups of architectural standards on which all implementation planning and procurement is based: the unmet need standards and the purchasing standards. Architectural standards setting and refinement is a continuing process based on experience, research, and evaluation.

The KETS Architectural Standards are extensive and rigorous. At the same time, adherence to the principles of open systems means that Kentucky's schools have a wide range of choices among which interoperability and reliability are guaranteed.

Every instructional and administrative component is tested against technical specifications in a stand-alone mode and for network interoperability before a final contract is signed. This means that before a component is released to the field, it has been tested to ensure that it operates with every other KETS hardware, software or network component on both local area networks and the wide area network.

Implementation Support Structure

Support for implementation of the Master Plan is distributed throughout the state based on collaboration between the state, local staff, and regional education partners.

Two full-time Kentucky Education Technology System professionals (an instructional technology specialist and a network engineer) are assigned to each of the eight (8) Regional Service Centers. These individuals are 100% state-funded staff available to every district and school within the region. They assist with KETS planning and implementation, working closely with District Technology Coordinators to build local capacity. Although they live and work locally, regional staff function as a statewide support team. Meeting regularly together and managed from the same point of authority, these staff are the primary liaisons between the state and local levels.

Each district has a District Technology Coordinator and each school a School Technology Coordinator. These staff participate with state staff and form inter-district partnerships to support technology initiatives. The Master Plan recommends that the District Technology Coordinator position be full-time, occupied by an individual dedicated to championing the vision of the Master Plan in all aspects of the instructional and administrative systems. This includes leading the integration of technology into the curriculum, creating and implementing a vision for improved student learning through technology, and planning for the effective preparation of all teachers to use technology well.

To be truly effective in their work district and school technology coordinators will need access to additional technical support, whether that support is provided by district employees or contracted staff. If districts do not staff sufficiently and appropriately to support KETS implementation, technology coordinators tend to be relegated to technical support because the critical demands for immediate operational assistance overcome the more strategic demands for consulting and assistance with instructional design.

Districts are dealing with the issue of local staffing in a variety of ways. Some are vesting the responsibility for on-site technical support with student-lead groups; others are finding funds to assign additional staff so that one person can concentrate on networks and technical issues while the other deals solely with instructional practice issues. Regardless, the issue of providing teachers with an adequate range of onsite support will continue to be a huge challenge.

Collaboration with Other Statewide Initiatives

Coordination of planning and policy between the Kentucky Education Technology System and other statewide agencies or major public policy initiatives is carried out through the Department and the Kentucky Board of Education. The state's ability to leverage resources and reduce resource duplication saves money and expedites service delivery.

For example:

- In many communities, adult education and literacy programs as well as other community organizations have access to school technology after hours. This benefits both the community programs and the school, since these collaborations often bring citizens into the school who might not otherwise be involved or aware of what education reform means to the community.
- Kentucky's Family Resource/ Youth Services Centers, administered by the Cabinet for Human Resources, and secondary vocational education schools, administered by the Workforce Development Cabinet, are integrated into the *Master Plan for Education Technology*. This means that K - 12 students who are supported by one or more of these programs have access to the same high-quality technology resources in all their learning environments.

Consolidated Planning: Integrating Technology into Comprehensive School Planning

For the past several years, KDE has supported educators in school districts and schools as they worked together for the good of students. As one method of assistance, a consolidated format for planning that fosters collaboration and integration between various district and school level programs and initiatives was developed. KDE is making collaboration a priority within KDE, partly to streamline activities but mostly to improve service to local district and school staff.

The primary focus of the Consolidated Planning project will be to reduce the amount of paperwork and duplicative reporting necessary for schools and districts to comply with state regulations and to receive funding. The ultimate goal is to develop a consolidated district/school planning process that will become the single tool for data collection, planning, and funding allocation by the 1998-2000 biennium. As a result of this initiative, school planning will change from focusing on allocating resources from special programs to allocating resources to meet the needs of students in a specific organization. All funds, regardless of source, will be leveraged on the academic improvement of students.

KDE plans to provide school and district planning teams with an Internet-based application which includes the instructions and forms necessary to formulate their Consolidated Plan and Funding Application. Planning teams will access the application through an Internet browser. Consolidated Program Reporting will be added to application functionality as a second phase of this project.

The Infrastructure: Networks and Access

The Master Plan for Education Technology calls for an integrated voice, video, and data network linking all schools, classrooms, district offices, regional service centers, and the state department with other education partners. It also calls for equitable access to a wide variety of instructional and administrative services to be delivered through the network to computers in every classroom and administrative office.

In January 1998:

- 956, or 65%, of the state's public schools are operating at least a partial local area network; and,
- 1,000, or 68%, of the state's public schools are directly connected to the state wide area network, the Kentucky Information Highway.

 By June 1998:

- 1,156, or 79%, of the public schools will be operating at least a partial local area network; and,
- 1,200, or 82%, of the state's public schools will be directly connected to the state wide area network, the Kentucky Information Highway.

 By June 2000, Kentucky expects 100% of schools and classrooms to be connected to full standards through a combination of state funding, Technology Literacy Challenge Funds, and discounts to be obtained through the Universal Service Fund.

The Universal Service Fund

In May 1997, the Federal Communications Commission adopted a Universal Service Order implementing the Telecommunications Act of 1996. The Order ensures that all eligible schools and libraries have affordable access to telecommunications. Up to $2.25 billion annually is available to provide discounts to schools and libraries for authorized services.

Discounts range from 20 percent to 90 percent based upon the percentage of children eligible for the federal free and reduced price lunch program. Discounts can be applied to commercially available telecommunications service, Internet access, and internal building connections. This program is not a grant program; schools and libraries pay only the non-discounted portion of the cost. The discounted portion of the cost is paid directly to the service provider from the federal fund.

To qualify for discounts, eligible institutions must submit an application indicating the existing contracts on which they seek discount, the pending contracts which they will submit for discount, the level of federal funding commitment they require to support local effort, and the discount rate which they wish to establish.

The Kentucky Department of Education will apply as applicant on behalf of all the state's public schools. As a consortium, the state will be able to secure discounts on all eligible products and services for every district and school through a single application as rapidly as possible. This approach will also enable the state to guard against potential disruptions

in equity which could be introduced by the imposition of different discount rates for different districts. Kentucky will apply for a fixed discount to be applied statewide.

If we accept the premise that information is the power and the essence of future decisions, we must also accept the reality that we need to connect our classrooms, so that our children begin to acquire these necessary skills at a very young age."

William Kennard
Chairman, Federal Communications Commission
on the importance of the Universal Service Fund

Palo Alto, California, 5 January 1998

The Kentucky Department of Education estimates that $90 million of the $93 million remaining need for networking may be eligible for discount under the Universal Service Fund. Conservative estimates place the value of that discount at around $60 million. This means that, after USF discounts are taken into consideration, a combined state and local investment of about $33 million could complete networking in all the schools to the same high standards.

To ensure that every school gains full advantage of the Fund, the Department will conduct an intensive review of each district's networking status in early 1998. This will clearly identify all gaps in service and document the budgetary requirements of completing network projects. The process will also encourage districts to focus all available funds on completing network implementation during this time when work can be done at substantial discount.

Besides the savings in capital cost to install networks, the state will continue to receive substantial discounts on recurring costs associated with network support and operation while the Fund remains in effect. Those annual savings, after full implementation, are estimated at $11 million.

Computers in the Classrooms
The investment in the network means little, of course, unless there are sufficient numbers of adequately powered computers in every classroom.

Local initiative and contribution above the required match are helping reduce the unmet need for both student and teacher workstations more rapidly than the state investment alone:

	Student : Workstation	**Teacher : Workstation**
1995	17:1	5:1
1996	13:1	4:1

1997   8:1   2:1

Goal   6:1   1:1

Electronic Mail Messages
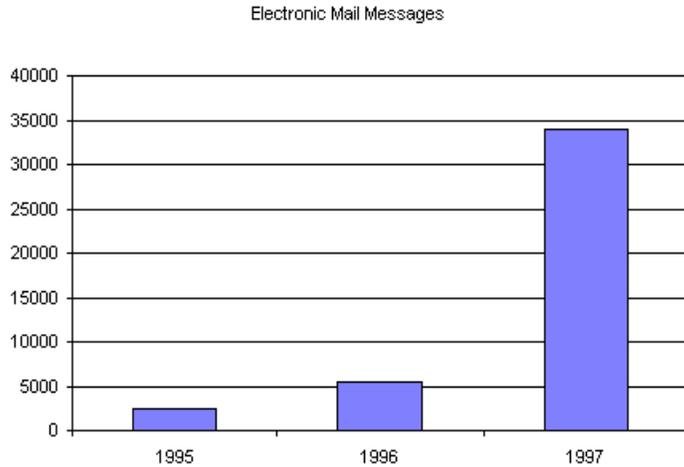
The ratios above are based on current KETS standards; that is, no computers are counted into the ratio unless they meet minimum performance and capacity benchmarks. However, many of the computers counted as standard under these ratios were bought in 1992 and 1993. While they have had a useful life, they are of a much older architecture and not really able to run interactive, multi-media software.

For that reason, this Update of the Master Plan raises the minimum unmet need architectural standard for workstations and removes those from the unmet need calculation which do not meet the new standard. This means that each district will be eligible to use Offers of Assistance to replace older computers. This change removes about 19,000 five to six year old computers from the ratio which results in the following:

	Student : **Workstation**	**Teacher :** **Workstation**
1995	17:1	5:1
1996	13:1	4:1
1997	8:1	2:1
1998	11.5:1	2.6:1
Goal	6:1	1:1

After this adjustment, the cost to meet the Master Plan objective of at least one KETS-standard computer for every six students by the year 2000 is about $65 million; the cost to provide a computer for every teacher within the same period is about $34 million.

The Growth in Use

Even though questions remain about exactly how technologies are being used in Kentucky classrooms and what impact they are having, there is no question that use has grown rapidly since 1995 when these services became available to Kentucky schools from at least one point of presence in every district:

Network Traffic
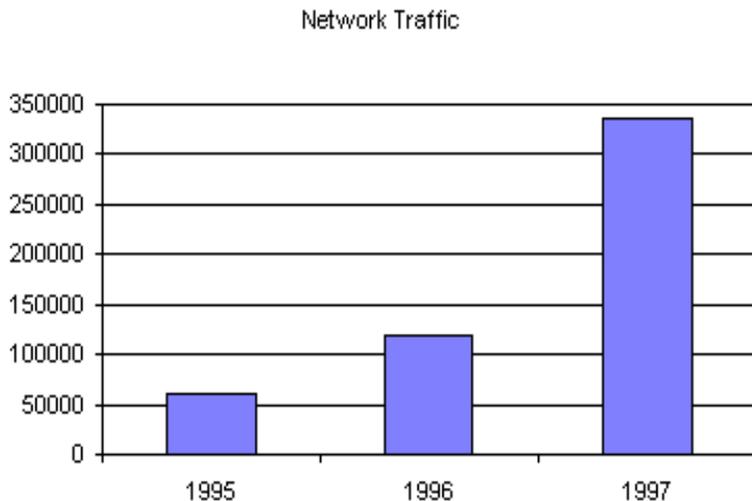
Data indicate that today use of these resources in Kentucky is widespread; that is, districts with high poverty rates or high percentages of racial and ethnic minorities participate equitably in network use once the network becomes available. However, equity must be continually monitored in case the gains made begin to falter.

Schools in high poverty districts have been somewhat slower in making the large capital investment in networks; in mid 1997, 64% of schools in high poverty districts were directly connected to the statewide network as opposed to 93% in high income districts. This gap began closing more rapidly with the influx of Technology Literacy Challenge Funds in late 1997 and would disappear completely with implementation of the Universal Service Fund. Vigilance will be required to ensure that state policy and funding mechanisms sustain equitable access when the majority of funding requirements shift from capital to recurring costs.

Teaching and Learning with Technology

Professional Development: Teachers as Learners and Teachers as Leaders

Kentucky is making a significant investment of time and money to prepare teachers to integrate technology into daily instruction for every child. The Kentucky Education Reform Act makes it clear that the preparation of teachers to use technologies effectively is a long-term, recurring obligation shared by state, district and school leadership. The preparation and support of teachers is critical. The enlightened and appropriate use of technology in every classroom, in every area of the curriculum, and with every age level is not an option but a responsibility.

School Use of Department Website
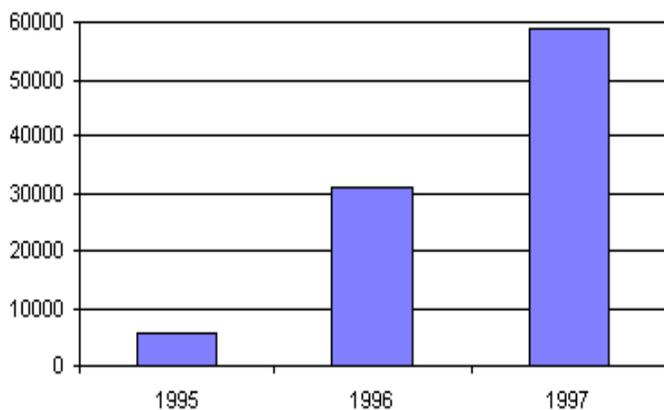
Kentucky is basing the teacher training initiative on several programs based on collaboration among state, district, and school staff. These programs engage individuals from various sectors of the education community in specialized training to build technology skills, to prepare them to teach others, and to develop their capacity for leadership. Still, the impact of these programs and the transfer of knowledge among teachers is largely dependent upon the individual's interest and personal incentive to learn.

In order to reach the majority of educators, local districts must take responsibility in their 1998/2000 Consolidated Plans to incorporate appropriate technology training as a requirement for every single teacher and administrator. To that end, the Master Plan budget is being amended to require that the need for professional development be budgeted on a per teacher/administrator basis. This strategy will form the basis for a set of professional development standards against which school and district progress can be monitored on a more meaningful basis.

Emerging Standards for Teaching Teachers to Use Technology

- Funds for professional development will be budgeted on a recurring per teacher/administrator basis
- Technology training will be incorporated into the professional development program as defined by the school's Consolidated Plan
- Every teacher will participate in Level One training designed to achieve mastery of basic hardware and software skills: content-based software, office products, presentation tools, electronic mail, and the Internet
- Every teacher will participate in Level Two training designed which builds on basic skills, but focuses on how technology can be used to improve student learning and to achieve the objectives of instructional reform
- Every teacher will participate in Level Three training during which teachers develop creative applications customized to the needs of their own classrooms
- Those educators with particular skills and interests will have the opportunity to participate in Level Four to develop education technology leadership skills
- Teachers will have sufficient on-site technical support
- Teachers will use electronic mail and office products in the daily course of work to achieve productivity and to hone skills

These emerging standards are based on three fundamental beliefs:

- All teachers must learn to use technology at higher levels;
- Professional development which builds technology skills should not be limited to the subject of technology; and
- Professional development is an ongoing continuous effort, incorporating the four levels described previously.

Obviously, the preparation of every teacher to use technology well is an ongoing process that will cover a period of years. Although traditional professional development models will be used, non-traditional and newer approaches to transferring knowledge such as distance learning, mentoring, study groups, shadowing, action research, and others will be used as primary and/or secondary delivery systems.

Several self-evaluation instruments are available to establish the needs of each educator and the particular needs of the school. It is possible to have a very high level of technology in the school without it being used in particularly powerful ways, and a self-evaluation instrument such as Plugging In can help determine the particular needs of a school. The Department will also begin a new initiative to prepare a limited number of school-based teams of principals, library media specialists, technology coordinators, teachers, and students to accelerate change through technology in their schools.

The Department of Education will base 1998-2000 activities on gaining widespread support for the emerging standards described above. This will include re-focusing of existing programs and the identification of model professional development programs so that schools can adapt them to their own use.

Expectations for Teachers and Administrators

The *Master Plan for Education Technology* anticipated a time when all new teachers and administrators would come to the school with basic technology skills and the burden of building those skills would not fall to the local district. A few local districts, Anderson and Jefferson chief among them, have taken the lead on this issue by developing their own performance standards and requiring new hires to prove that they have basic skills, and the commitment to use them, as a condition of employment. This is an approach which the Department supports but the issue is much broader. The fact is that most certified staff still do not graduate from post secondary institutions having learned basic technology skills. Moreover, if they do not have these basics their understanding of the relationship between reformed instructional practice and the use of technology is purely academic and largely untested.

More effort is needed at the state level to address the desperate need for teachers and administrators prepared to use technology well. The Kentucky Association of Technology Coordinators (KATC), a statewide professional organization, is beginning efforts with the Education Professional Standards Board which may result in a strengthening of the technology-related standards for both new and experienced teachers. The major responsibility for upgrading the skills of new and experienced teachers lies with the state's post secondary institutions who are currently engaged in a major reform initiative.

On-line universities, academic common markets, and other regional or national providers of pre-service and in-service training will form part of the solution. The Department is participating on a professional development advisory group for the Southern Regional Education Board which will delineate standards and best practices for the preparation of new staff. This will provide information which can assist post secondary institutions in preparing teachers for technology-rich classrooms.

Experience has shown that one of the areas of greatest need for instructional technology training resides within the state Department of Education. All divisions within the Department need assistance in integrating technology into their internal operations and into their statewide initiatives. Expectations for Department staff should be no less than those for local staff.

Student Technology Leadership

Over four hundred (400) Kentucky public schools have active Student Technology Leadership Programs. Such programs are becoming popular across the country. The incentives are clear:

- Technology is popular among a broad population of students and has the fairly unique ability to attract students who may otherwise be at-risk;
- Schools cannot afford the on-site technical support that they require; and,

- Students can be effective trainers for teachers; learning can occur in a formal or informal setting, and also on an as-needed basis.

The five points below are drawn from research and are underlying assumptions of Kentucky's Student Technology Leadership Program (STLP).

The Power of Student Technology Leadership

- *Students who are involved in extra school activities in addition to regular classes have a significantly greater chance of success.* STLP is a key component of the overall instructional program.
- *Students need a variety of opportunities to learn because of their different learning styles and multiple intelligences.* STLP is for all students, regardless of their learning style.
- *The most powerful learning happens in authentic situations.* STLP engages students in authentic learning and real work.
- *Learning which involves service to others helps lay the foundation for good citizenship and leadership.* Students are prepared to provide training in the use of technology as a learning tool as well as a productivity tool for the home and at work.
- *Students provide extensive on-site technical support which most schools and districts could not afford to buy.* Students in many schools across the state are actually planning, implementing and supporting the technology in their schools. They work with adults who serve as mentors and teachers.

Part of the Kentucky Student Technology Leadership Program includes a special group of students who are identified as Junior Systems Engineers. These students "shadow" the KETS Regional Engineers at the Kentucky Education Technology Conference as well as other events which require the use of advanced telecommunications technologies. Junior Systems Engineers are selected through a competitive application process and become part of a cadre which received advanced training in such things as the installation and maintenance of local area networks, support for wide area networks, installation of software, and troubleshooting highly-technical problems. Throughout the year they provide support at special events and are treated as contracted professionals.

Students and STLP groups who do not follow the more technical track focus on providing technical training to teachers, administrators, staff, parents, and the community. These organizations are typically very active in their communities: leading basic computer skills courses for groups who may not otherwise be engaged with the school; constructing and supporting web sites for their schools and communities; and serving as technology mentors for student groups in lower grade levels.

"When you're walking around school, and a teacher says, '...can you come help us?, it makes you feel good that teachers are relying on you. . . .You're becoming a teacher and they're becoming students.'"

J. D. Archer Senior, East Jessamine High as quoted in "Education Week"

10 December 1997

Every year, Kentucky schools are learning more about the role of students as a hugely valuable asset for the technology program. We are learning too, that with these special skills, STLP "graduates" are far more successful in competing for employment, special work study programs in post secondary institutions, and other goals which they pursue after graduation.

Although the state provided seed money to assist in start-up costs during in the first year, the number of STLPs continues to grow without supplementary state funds. Schools find that there are powerful intrinsic and extrinsic rewards in the program. The Department will continue to support the local STLPs by providing students with opportunities to show what they've learned and by providing special training in the summer for STLP sponsors. Regional activities and support for the program will grow in 1998-2000 and the goal is to strengthen existing programs and to double the number of schools with STLP by the year 2000.

Instructional Technology Leaders

Even before the focus was expanded to student technology leadership, Kentucky had made a strategic decision to base the professional development program on developing practitioners as teaching leaders rather than on building a large state-level training staff. The Department began intense efforts to develop a cadre of instructional technology leaders (ITLs) in the summer of 1992 with the Partnership for Reform Initiatives in Science and Mathematics (PRISM). This small group of individuals has grown in each succeeding year, building their own skills and recruiting others into the cadre so that today there are over one-hundred Instructional Technology Leaders.

Though both promotion and burnout take a toll on the number of ITLs, the group is continually refreshed with additional candidates who bring new energies and new ideas. Today, the statewide ITL Coordinator at the Department can work with this cadre more dynamically and intensively because of the proliferation of the network; training, projects, and collaborative work can happen online between the times that the group can meet face-to-face.

Instructional Technology Leaders are prepared with special training and coaching to take on leadership roles in their schools and districts, to plan and support regional collaborative projects such as student technology showcases, to mentor Student Technology Leadership Programs, and to assume responsibility for aspects of statewide projects such as the Kentucky Education Technology Conference. Intensive training on integrating technology into the classroom continues for this group in the summer and as on-line professional development during the school year. During 1998-2000, these individuals will take a significant role in working with school-based councils to implement the emerging standards for teaching teachers to use technology well.

Library Media Specialists Online

In addition to the library media specialists who are part of the Instructional Technology Leadership cadre, there are library media specialists developing training, providing training, and receiving training in numerous applications of technology. Their goal is twofold: to run a library media center efficiently which is responsive to the school's

instructional goals; and, to help individual students identify and gain access to information they need, regardless of format or media.

School libraries in Kentucky have far more access to the Internet, and therefore to electronic library catalogs and materials in digital format, than the public libraries. Until more public libraries are online, the school library media center may be the only resource in the community capable of accessing information in something other than books.

The Master Plan has always envisioned a time when school libraries and the public library system would share resources through the network. This issue is far broader than building the infrastructure and making the connections. The library community must be involved in formulating policy at the local, state, and national level about how information in electronic form will be made available to schools and communities. In Kentucky, this means that they must be engaged in discussions about standards for sharing holdings, for sharing subscriptions to online services and electronic journals, for protecting intellectual property, for safeguarding individual privacy, for interoperability, and for ensuring equitable access. As a community, therefore, the library media centers have to be much more cognizant of national telecommunications policy and infrastructure development than they have been in the past.

The Kentucky Education Technology Conference

The Kentucky Education Technology Conference (KETC) has grown to become one of the outstanding technology training opportunities in the nation. By offering Kentucky educators an array of more than fifty (50) in-depth workshops, 300 interest sessions, and nationally-known featured speakers, KETC provides a rich experience for educators seeking ideas and practices that can be adapted to help their own schools and districts. Because the conference's priority is to be directly responsive to the needs of Kentucky educators, the agenda stays wholly within the context of Kentucky Education Reform and *the Master Plan for Education Technology*. The majority of those leading workshops and interest sessions are Kentucky educators; material is relevant and everyone "speaks the same language."

One of the distinguishing features of KETC is the substantial involvement of students in the operation of the conference. Most of the students from P-12 schools are members of their local Student Technology Leadership Program. Many of the college and university students who participate are those who have identified technology as a special interest, even as they pursue degrees in education, agriculture, or other areas.

Students provide the technical expertise for installing and operating a conference network for both the 80,000 square foot exhibition hall (ShowNet), the KETS C@fe, and the workshop area which includes eight computer laboratories. There are opportunities for dozens of students from each region to demonstrate how their schools are using technology in the Student Showcase. Several students support the digital art, music, and virtual reality displays held at the conference.

Other students serve as technical writers to document the planning and operational aspects of KETC. Student videographers and cyber-reporters produce a daily newsletter on the world wide web so that others can share in conference happenings and highlights. The student Conference Associates work as colleagues of the KETC conference staff,

using their problem-solving and leadership skills to troubleshoot logistical problems and facilitate resource allocation. No other statewide technology conference relies so heavily on the significant skills and talents of students.

Academic Villages: The Online Learning Community

Thirteen groups of Kentucky educators have determined that developing an on-line community for those who share the same interests and concerns is a valuable and powerful way to distribute and gather information, to share solutions to critical problems, to communicate about what determines best practices, and to share training. Villages which currently exist, or which have charters to form within the 97/98 school year, are:

- o Diversity Heights - A Special Populations Village
- o Elementary Education
- o Geoville - Geography Based Education (emerging)
- o Library Media Specialists
- o Language Arts
- o Math/Science Education
- o Middle Level Education
- o Milken Educators (emerging)
- o Principals
- o School Based Decision Making
- o School to Work
- o SSAVY- Student Services Academic Village, Y'all
- o Student Technology Leadership (emerging)

The members of the town councils who govern these villages develop not only their technological skills, but also their skills at facilitating dialogue and community building. As the Villages grow and expand, they will become a greater resource and online forum useful to all Kentucky educators.

Software Review And Selection

Considerable effort has been spent over the past two years in developing a process for reviewing and selecting appropriate instructional software and for making that information widely available. For the selection of electronic instructional materials which can be purchased with state textbook funds, committees from the stakeholder groups are formed to conduct evaluations and make final determinations. The selected materials are presented in regional showcases around the state.

1998 will see initiation of a new service to assist teachers make good choices about instructional software. The Southern Regional Education Board and its member states will begin making available to every teacher an on-line searchable database of software reviews in every subject area and grade level. This service will be based on a format developed in the North Carolina Department of Education and will be made available to teachers in member states at no cost to the local district or the individual. We expect this service to be higher quality, more timely, and easier to use than past software review services have been.

Research on Teaching and Learning with Technology

Research in education technology has typically looked at the relationship between technology and the learner, comparing student results when instruction is delivered via traditional means with results when instruction is delivered via technology. A summary of research studies conducted between 1992 and 1995 on computers in P-12 classrooms reached very positive conclusions about what happens when computers are in classrooms.

What seems to have been missing, and the aspect of education technology research which Kentucky is most interested in pursuing, is research about the relationship between technology and the teacher. Because Kentucky has chosen not to incorporate technology competency standards into student assessment or teacher evaluation, the questions have to do with teaching *with* technology and not teaching *about* technology.

From <u>Computers in the Classroom: The Impact of Technology on Student Learning:</u>

1. When properly implemented, the use of computer technology in education has a significant positive effect on student achievement as measured by test scores across subject areas and with levels of students
2. When used appropriately, the use of computer technology in classrooms stimulates increased teacher/student interaction and encourages cooperative learning, collaboration, problem-solving, and student inquiries
3. Students from computer rich classrooms show better behavior, more positive attitudes, lower school absentee rates, lower drop-out rates, earn more college scholarships, and attend college in greater numbers than do students from non-computer classrooms

4. Computer-based teaching is especially effective among populations of at-risk students.

The Master Plan for Education Technology clearly positions technology as a tool for effective teaching and learning rather than as an alternative means of instruction; we must know more, therefore, about what teachers and students believe about technology, what they need to learn about technology, and what they need to use technology well.

Kentucky will initiate research into this topic in early 1998 by commissioning a study or series of studies on the effectiveness of technology in education as required in the 1998 Commonwealth budget bill. The research will address: the effects and uses of technology; the training provided for teachers, staff and students; effective computer ratios; utilization of technology by administrators; effectiveness and use of local funds; and actual expenditures. These studies will lead to findings and conclusions which can, in turn, refine the state's research agenda for subsequent studies. In addition to commissioning research locally, the state will continue its work with partners such as the federal educational laboratories, the Southern Regional Education Board, institutions of post secondary education, the International Society for Technology in Education, and other organizations.

As the scope of research expands, the Department would like to obtain follow-up data on students who have participated actively in the Student Technology Leadership Program. The Department believes that these students, because of their rich experiences, will experience an easier transition to the world of work, will have a greater choice of careers, and will command higher salaries earlier in their careers.

Public School Administration

The Kentucky Education Reform Act clearly stipulates that improvements in the administration of the public school system are critical to the provision of equitable access to an effective system of instruction. Subsequently, the *1992 Master Plan for Education Technology* incorporated a broad scope of objectives for improving school administration through the use of technologies:

Master Plan Objectives For Technology and Administration

- Implement standards-based technology applications for student/school management, administrative systems, statewide information, office services, and communications services;
- Implement uniform coding and accounting structures and a standard system of financial management;
- Increase the accuracy and timeliness of data collection and information to support decision making;
- Generate reporting data as a by-product of daily activities and reduce process redundancy; and,
- Support the concept of site-based management.

The Master Plan specifies administrative functions to be supported at the state, district, and school levels.

District and School Administrative System Implementation

The general assembly, in constructing the statutes which would result in *The Master Plan For Education Technology*, called for implementation of "uniform and integrated system of standards and guidelines for financial accounting and reporting which shall be used by all districts" (KRS 156.670(3)). The statute also requires "comprehensive, current, accurate, and accessible information relating to Management, Finance, Operations, Instruction, And Pupil Programs" (KRS 156.670(4)). The Master Plan specified that implementation of district administrative systems would be funded entirely by the state so that the burden of financing and project management did not fall to the local districts. The Master Plan defines district and school administrative system implementation and maintenance as including:

- o A full-function Local Area Network
- o Workstations, printers and file servers
- o Connection of the District Office to the statewide network
- o An integrated suite of office products
- o Communications services, such as electronic mail, Internet, and remote access
- o Financial Management System
- o Transportation Management System
- o Facilities Management System
- o School Food Services Management System
- o Pupil Attendance Accumulator

District Administrative System began in 1994; implementation was scaled to provide critical functions appropriate to available funding levels. Implementation of the local area network, wide area network connection, and office and communications services preceded installation of the financial management system. The scope of the financial management system included those applications deemed most critical: Accounts Payable, Personnel, Payroll, Budget, General Ledger, and Purchasing.

By August 1995, ten (10) months before the target completion date:

- o Each district was running a local area network connected to the wide area network;
- o Each district was running a standard suite of office and communications services;
- o Each district had electronic mail and Internet access; and,
- o Each district had the capability to report data via the network.

In October 1995, the financial system implementation plan was revised in response to evaluation of the implementations in forty-seven (47) districts. Support was enhanced in the areas of training (software and accounting), documentation, and on-site support. This revision extended the initial implementation phase of the project, with the last group of districts beginning implementation of the financial management software in July 1997.

As of July 1997,

- o Each district has installed a common financial management system;
- o One hundred fifty-one (151) districts completed fiscal year 1997 processing and financial reporting using a common financial management system;
- o At least 175 districts will complete fiscal year 1998 processing and financial reporting using a common financial management system; and,
- o An implementation strategy for the common financial management system in the remaining district, which is also the largest, will be finalized by the end of Fiscal Year 1998.

Implementing New Accounting Practices

As part of this implementation, Kentucky districts also changed the way they conduct business based on a newly adopted chart of accounts. For the first time, district financial management employs fund-based, modified accrual accounting.

Support for the initial implementation of the software is largely complete. Districts, for the most part, are now knowledgeable in how to "push the buttons" to produce payroll, warrants, reports, etc. However, much assistance is needed with interpreting the results of financial operations and performing the more complex system processes. For this reason, support efforts for the next biennium will be directed to increasing the proficiency of all software users. This will insure that all districts are well positioned to take full advantage of the financial management opportunities offered by the system.

Support offered will include:

- o Post-implementation review in approximately one-third of the districts in which the financial management software was implemented;
- o Continued provision of classroom-based software training and regional user-group meetings;
- o Continued provision of on-site financial and software support for districts struggling with efficient operation of the software; and,
- o Continued identification of enhancements to the financial management software.

Completing Implementation of the District Level Administrative Systems

With lessons learned from the initial implementation, the Commonwealth is revising estimates for the amount of funding, effort, and time required to implement the remaining systems: transportation; school food services; and facility management.

The School Administrative Systems

The Master Plan identifies five administrative applications for the school:

- o Pupil attendance and accounting;
- o Scheduling;
- o Grade reporting;
- o Instructional management; and,
- o Library management.

Funding for implementation of school administrative systems is shared equally by the state and the districts and is scheduled at the discretion of the district. These applications are implemented in addition to the same suite of office and communications services present at the district level.

Pupil Attendance and Accounting, Scheduling, and Grade Reporting

Districts have the option of implementing pupil attendance and accounting systems at the school level for which KETS standards-based contracts have been established These systems feed data over the network to a uniform district level accumulator being installed

in every district office. This means that districts are able to supply aggregated data in a consistent, standard format to the state Department of Education for statewide reporting.

Seventy-nine (79) districts have installed common district level attendance accumulator software. Five-hundred fifty-nine (559) schools have installed a KETS-approved school level attendance software package.

Instructional Management

Instructional management systems must be selected and contracts established for each. Limited funding has constrained the ability for the project to research, evaluate, and negotiate for these modules.

Library Management Systems

Library Management Systems have been selected for use at the school level. These systems allow school users to catalog and manage circulation for school library collections. Three-hundred thirty-five (335) schools have installed a KETS-approved Library Management System.

Statewide Reporting

The Master Plan calls for a decision support system to assist the management and evaluation of the public education system in Kentucky. The primary users of the system are identified as the state department, the Governor's office, and the state legislature.

The Statewide Reporting and Information Management system (SRIM) is operational. Based on relational database technology and accessible through the network, SRIM is developed and enhanced in phases as older legacy systems are phased out and new systems begin to generate data.

An Enterprise Data Model

As a fundamental component of the system, an enterprise data model depicting the data collected and shared within the public education system has been constructed and is constantly under review and revision.

By identifying what data elements are collected, how they are used, and how they are combined, the data model provides a structure for improving management processes, revising work flows, and reducing duplicate data collection.

The Statewide Reporting and Information Management System collects, organizes, and presents data from various sources, making data which was only updated and available as a published document once a year available on-line and updated more frequently.

Data collected and presented within SRIM include:

- o Professional staff data: information about the professionals working in schools, districts, the Department, and related organizations. Contains basic demographic data in addition to listing special areas of expertise or training
- o Local school board chairpersons and membership
- o School and district profile data

- o State Department program and project information
- o Aggregate attendance data for schools and districts, includes average daily attendance
- o Enrollment data
- o Accountability data

In an effort to make SRIM data available to a larger audience, a pilot project to access SRIM data via the Internet has been initiated. Today, information on job vacancies in Kentucky Public School Districts and Professional Development opportunities are stored in the SRIM database and made accessible to the general public via the Internet. This functionality will be expanded as time and resources permit.

Statutory Authority and Responsibility

The Master Plan for Education Technology

KRS 156.666 establishes the Council for Education Technology as an advisory group to the Kentucky Board of Education. The Council was responsible for developing the Master Plan for Education Technology.

Approval and Update of the Master Plan

The Kentucky Board of Education and the Legislative Research Commission shared initial approval authority for the Master Plan pursuant to KRS 156.670(1).

KRS 156.670(7) places responsibility for updating the plan, as necessary, with the Council and the Board. Updates are to be reported to the Legislative Research Commission.

Standards

KRS 156.160(1) stipulates that the Kentucky Board of Education has a statutory mandate to prescribe standards which school districts shall meet. Among these are standards for the "acquisition and use of educational equipment for the schools as recommended by the Council for Education Technology," (KRS 156.160(1)(b).

KRS 156.670(3) states that the Master Plan shall "establish and implement a uniform and integrated system of standards and guidelines for financial accounting and reporting which shall be used by all school districts."

KRS 156.670(4) requires that the education technology system provide 'comprehensive, current, accurate, and accessible information relating to management, finance, operations, instruction, and pupil programs which are under the jurisdiction of the Department of Education.' The Chief State School Officer must certify these data to support administration of the Fund to Support Education Excellence, which provides funding to support the public school system in accordance with KRS 157.330. The guaranteed base funding level for each district is computed based on the prior year's average daily attendance (KRS 157.360(1)) which is calculated based on data collected within the school and accumulated at the district level. To support this funding process, the Kentucky Board of Education has the obligation and authority to establish standards for administrative systems at the district and school level, including, but not limited to, uniform codes, processes, and software systems.

The statutes do not restrict the standards-setting responsibilities noted above to any particular source(s) of funds. The Kentucky Board of Education, therefore, has the authority and obligation to specify standards for education technology to which school district acquisitions of hardware and software are subject regardless of source of funds. The Board therefore may specify, as it deems necessary, a standard for any line item in the Master Plan budget.

These standards are set forth in the Master Plan for Education Technology and incorporated by reference into the Kentucky Administrative Regulations pursuant to 701 KAR 5:110 and in compliance with KRS 156.160(1).

Districts are required by Kentucky Administrative Regulation 701 KAR 5:110 to procure only those technologies which meet KETS standards, if a standard for that category has been established, regardless of source of funds.

Education Technology Trust Fund

The Education Technology Trust Fund is established in the Finance and Administration Cabinet by KRS 157.665(1) to provide education technology for the public school system.

Funds are appropriated to the Trust Fund in each biennial budget. All interest earned on money in the fund is retained for reinvestment in the fund. All money credited to the fund, including interest, is to be used for education technology as defined by the Kentucky Board of Education's Master Plan and does not lapse (KRS 157.665(2)).

The School Facilities Construction Commission, within the Finance and Administration Cabinet, is responsible for distributing state funds to local districts through the education technology funding program (KRS 157.650).

To participate in the education technology funding program, a local public school district must have an unmet technology need described in the district technology plan and approved by the Kentucky Board of Education (KRS 157.655(1)).

The base level of assistance to each district is determined by dividing the total amount available in the Trust Fund by the total of the prior year's average daily attendance of the eligible districts times the individual district's prior year's average daily attendance (KRS 157.660(1)).

Funds transferred to districts are to be used only for the projects included in the district's technology plan (KRS 157.660(2)).

Trust funds are transferred to local districts after the district's need for assistance has been certified by the School Facilities Construction Commission. All other expenditures from the fund require the approval of the Kentucky Board of Education (KRS 157.655(3)).

Calculation of Unmet Need

Technology secured through local initiative which is not procured with public revenues will not be used to reduce the unmet need of the district for the purpose of calculating the amount of offers of assistance for which the district is eligible.

Technology procured with federal categorical funds will not be used to reduce the unmet need of the district for the purpose of calculating the amount of offers of assistance for which the district is eligible.

Any technology procured or secured by a district, in a category for which a Kentucky Education Technology System unmet need standard is established, regardless of whether the item is used to reduce the unmet need or not, must meet or exceed the KETS standard in compliance with 701 KAR 5:110.

Any technology procured or secured by a district, in a category for which a Kentucky Education Technology System unmet need standard is established, regardless of whether the item is used to reduce the unmet need or not, must be included in the District Technology Plan as inventory.

Components for Which Standards Have Been Established

Workstations
Intel Workstation/Stationary/Level I

Motorola Workstation/Stationary/Level I

Intel Workstation/Stationary/Level II

Motorola Workstation/Stationary/Level II

Intel Workstation/Stationary/Level III

Motorola Workstation/Stationary/Level III

Intel Workstation/Portable/Level II

Motorola Workstation/Portable/Level II

Intel Workstation/Portable/Level III

Motorola Workstation/Portable/Level III

Optional Monitors

Printers

Level I Dot Matrix

Level II Dot Matrix

High Speed Dot Matrix/Level I and II

Color Compatible Dot Matrix

Level I Line Printer

Level II Line Printer/Level III

Level I Inkjet Monochrome

Level I Color Capable Inkjet

Level II Color Capable Inkjet

Level I Laser

Level II Laser

Level III Laser

Level I Color Capable Laser

CD/ROM

Fileservers/Level I, II, and III

Network Components

Routers

Network Concentrators

Network Interface Units

Network Interface Cards

Network Computing Services

CSU/DSU's

Building Wiring (incorporates EIA/TIA standards)

Work Area Wiring

Horizontal Wiring Subsystem

Building Backbone Subsystem

Campus Backbone Subsystem

Power Wiring

Installation Standards

Dial-up Routers

Software

Network Operating Systems

Operating Systems

Relational Database Systems

Office Products (Word processing, spreadsheet, calendar, graphics, end-user database)

Electronic Mail

Internet Browser

Remote Access Software

Proxy Software

Network Management Software

Instructional Software

The Kentucky Education Technology System does not establish specific standards for instructional software. KETS has developed guidelines in the form of a checklist for educators to use during software selection. Instructional software must run, however, on KETS standard hardware in a KETS-standard network environment.

To secure discounted pricing KETS does issue competitive solicitations and establish price contracts for the most popular instructional software products.

Applications

District Financial Management

Pupil Attendance

District Level Attendance Accumulator

Online Instructional Software Review Service

Television Monitors

Help Desk Monitors

Telephone Systems