Comprehensive Technology Use Planning

TEC 911

Fresno Pacific University

Table of Contents

Welcome Letter

Welcome, and thanks for enrolling in TEC 911: Comprehensive Technology Use Planning! If you are familiar with Moodle you are all set to login to your Fresno Pacific University account, navigate to your Moodle Dashboard, then click on the TEC 911 link to begin.

Within a business day of receiving official word of your registration, I will mail you out a physical copy of the course workbook via USPS Priority Mail. I am doing this at my own expense and for your convenience as I strongly encourage everyone to use the physical TEC 911 workbook when working through the material. That way you will not need to toggle from the onscreen PDF of the workbook and the Moodle screen. You don't need to be sitting in front of a computer when reading the contents of the workbook.

Before you jump right in to the assignments please take some time to familiarize yourself with both the course website and the workbook. Seeing the scope, flow, and pace of the course will help you get the 'big picture' of TEC 911.

When utilizing the course website, note there are columns of links at the bottom. The first item of business is to click on the 'Course Forms' link and download the .zip file to your computer. The .zip file will create a folder containing forms and documents needed to complete the course. Please familiarize yourself with these as well.

You will be submitting completed assignments a couple ways: (1) Google Forms are submitted upon completion and (2) other documents (i.e. word processed narratives) will be sent to me via Moodle. To submit the non-Google Forms assignments the preferred option is to save to a 'portfolio' folder on your computer then upon completion of all coursework, simply upload your portfolio to me via the 'Portfolio Submission' link found in module 5 of Moodle. This makes returning the bulk of your coursework a one step process, as opposed to doing it piecemeal, one at a time via Moodle.

Be sure to request online grading (the directions are on the last page of the workbook) once you've submitted all assignments as that is my prompt to review your coursework and submit your grade.

If at any time you have questions, concerns, or you need a bit of guidance with a particular assignment, please email me (preferred) at SteveYoungFPUniv@aol.com or call at (559) 434 6494 - I am here to help!

Thanks again for enrolling. I look forward to working with you!

Steve

NOTE: On the course website or from the Moodle page, please click the relevant link to confirm you have read this page.

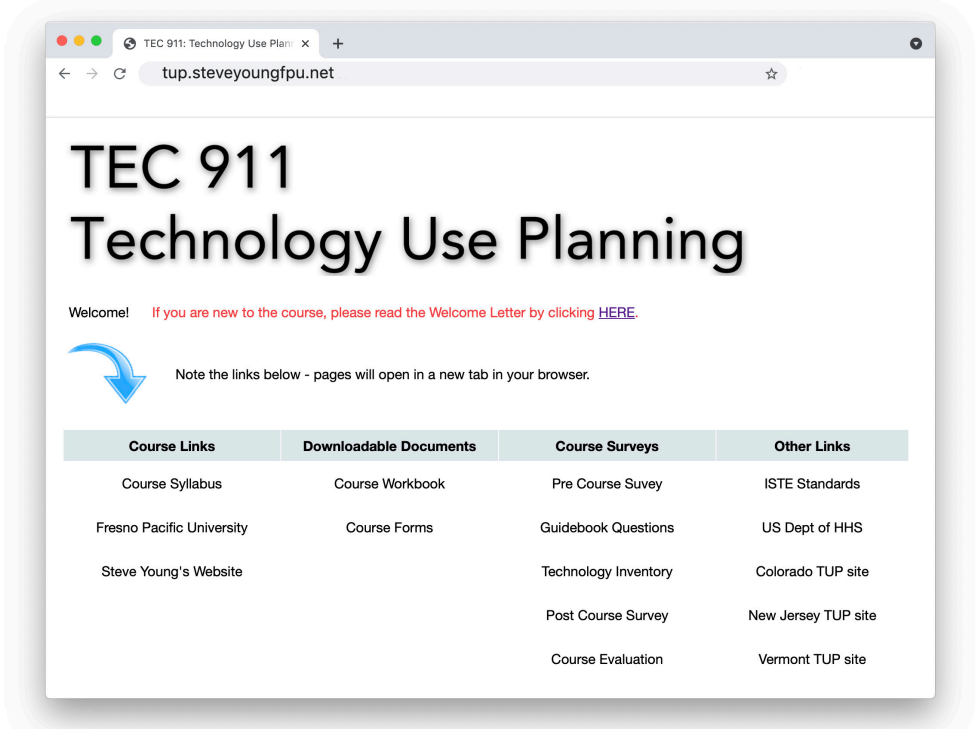
Course Website - www.tup.steveyoungfpu.net

In addition to this workbook, there is a companion website containing links to other resources you will need to complete this course.

On the website, you will note four columns of links. There are directions elsewhere in this workbook which refer to some of the links where relevant. Though not referenced in the workbook, I have included an 'Other Links' column you may want to check out.

Utilizing the course completion checklist as a guide, you will be accessing the following links from the course website (listed in recommended order):

Course Syllabus
Course Workbook - the pdf version of your physical workbook
Course Forms - the downloadable package of forms to be used from your computer
Pre-Course Survey (via Google Forms)
Guidebook Questions (via Google Forms)
Technology Inventory (via Google Forms)
Post-Course Survey (via Google Forms)
Course Evaluation (via Google Forms)



For information on the Fresno Pacific University Academic Policies and Procedures for Independent Study Courses, click the 'Fresno Pacific University' link and click the ‘CE Policies and Procedures’ link at the bottom of the page.

Course Completion Checklist

The following is a list of all assignments required to be completed and returned:

- ☐ Pre-course Teacher Survey (via Google Forms)- p. 5
- ☐ Guidebook Questions (via Google Forms) - p. 36
- ☐ Planning Committee Membership Roster (using the downloaded form) - p. 38
- ☐ Technology Inventory (via Google Forms) - p. 40
- ☐ Staff Survey of Technology Needs (using the downloaded form) - p. 42
- ☐ Evaluation and Analysis of Staff Surveys (using the downloaded form) - p. 50
- ☐ Needs Ranking (using the downloaded form) - p. 51
- ☐ Vision Statement (using the downloaded form) - p. 58
- ☐ Implementation Timeline (using the downloaded form) - p. 59
- ☐ Post-course Teacher Survey (via Google Forms) - p. 61
- ☐ Course Evaluation (via Google Forms) - p. 62
- ☐ Submit Request for Online Grading

Pre-course Teacher Survey

To fill out and submit this form, please go to the Pre-course Survey link on the course website. (www.tup.steveyoungfpu.net). I have copied the survey here merely for reference. A copy of your completed form should be e-mailed to you after submitted. A couple brief, succinct sentences should suffice

What grade/subject(s) do you currently teach?

What type(s) of technology is currently available in your classroom? At your school?

Is there currently any systematic approach to the implementation of technology at your school? Briefly explain

What information or experience focused your attention on the need for technology use planning?

At what level (department/grade level/District) is the information gained through completing this course going to be used ? By whom will it be used?

The Promise of Technology

Guest Editorial by Diane Ravitch

"Eight Ways To Take Full Advantage of Technology"

In a world often over-enamored with change for change's sake - and thus technology for technology's sake - advocates of technology in our schools should have a compelling answer to the question, "Technology for what?" The answer, we suggest, is twofold: to promote equal educational opportunity for all of our children and to raise the academic achievement of all children. Technology can advance both equity and excellence in education.

Unfortunately, some schools have been disappointed because they have failed to make use of technology's full instructional potential, applying it in unimaginative ways, such as for rote memorization and drill. Also, the nation as a whole has not come to an effective consensus about our goals in using technology to improve teaching and learning.

To help schools fully realize the promise technology holds for education, we propose the following:

EIGHT RECOMMENDATIONS

- Build consensus on what children should learn. Effective use of technology for learning will require standards and outcomes for student learning, toward which technology could be directed and against which its effectiveness could be measured. The Department of Education is already funding independent organizations to develop voluntary national standards in core subjects.

- Redesign the basic structure of the learning community. School organization has been traditionally hierarchical, bureaucratic, and dependent upon textbooks and non-interactive lectures. New technologies challenge this model, as well as some educators' fundamental assumptions about educational practices. In advocating greater use of technology in schools we advocate not a new "frill" but a basic redesign of schools as learning communities.

- Educate the public about the uses of technology for learning. Greater public understanding of technology's potential for education, through foundation or government efforts, will drive its increased use in the schools.

- Create a federal office of educational technology. This office could: research and evaluate programs and cost-effectiveness of various technologies; monitor progress in professional development and equity of access to technology; create on-line data bases for education; and advocate funding.

- Make access to technology universal by wiring every school. Every school should be wired for access to all forms of educational technology through a mixture of federal, state, and private sector policies and funds.

Plans for integrating technology into a curriculum should ensure that access to technology-based forms of instruction does not hinge upon students' socioeconomic status, and that the programming selected is not politically biased.

- Revise the federal Chapter 1 program. Chapter 1, the largest educational funding program for low-income children, has promoted excessive attention to basic skills using drill and practice programs. It should be redesigned when the programs are reauthorized by Congress in 1993 to encourage higher expectations for all students, better assessment procedures, and broader uses of technology.

- Incorporate technology into redesigned schools. Special attention should be given to incorporating technology into new or redesigned schools, including those supported by private ventures (for example, the New American Schools Development Corporation and the Edison Project), foundations, and school districts.

- Develop benchmarks for educational technology products and services. Much educational software is of poor quality, developed without input from teachers or others who are knowledgeable about learning research or principles of curriculum design. It is often installed without adequate training for users.

A national business organization, such as the Business Roundtable, should convene representatives of industry, schools, research, and curriculum design to develop industry standards in these areas. The effort could be started with foundation funds to help promote its impartiality.

Educational technology will continue to advance whether we like it or not. As educators, it is our job to make sure that technology is planned for and implemented in ways that are best for all our children.

Diane Ravitch was the Asst. Secretary of Education. This article was written with James A. Mitchell, special assistant for technology for the U.S. DOE. This article was adapted from the periodical, "Electronic Learning", January 1993, p. 50.

TECHNOLOGY USE PLANNING GUIDEBOOK[1]

The Purpose of Technology Planning

Technology planning is an activity that provides direction and helps users understand clearly where they are now and imagine where they want to be. The most common technique used to formalize technology planning is the creation of a document. A technology planning document is to technology planning as a road map or a navigational chart is to a journey but the planning document is neither the journey nor the adventure. It is a device that helps explain the various points of interest and destinations to travelers involved in the process of realizing their dreams.

The purpose of technology planning is not just to produce a document, but to produce a continuous action plan that creates and maintains a technology-rich educational environment. The document is a clear, written description of the process that is put into action by members of the community.

The Planning Process

Like a long journey, technology planning is long-term and continuous. There are discoveries about different routes to the same destination. There may be side-trips. Keep planning. Allow plenty of time (a year is suggested). Include all stakeholders in the planning process - students, teachers, parents, administrators, community leaders, and other members of the community who will benefit from the implementation of the plan.

Keep in mind that when the technology is in place and in use it should be transparent. The real purpose of technology in education is education. Hint: Keep a log of council/committee activities for reference and as a resource for the planning document .

Consider the following:

• How best can we assess the present state of technology and future needs?

• How can we provide for ongoing evaluation and assessment?

• How often should the planning council/committee meet?

• What educational institutions that have already installed and implemented technology, such as electronic classrooms, can we visit?

• What conferences, expositions, etc. can we attend to discover more about our greatest potential in technology?

• Where can we find planning resources (people and documents)?

• How should we divide the planning responsibilities?

1 See Appendix D for credits..

The Planning Document

A planning document is one physical outcome of the planning process. This guidebook presents key elements to consider in preparing the written portion of a technology plan. It is intended to expand a planning committee's familiarity with technology planning and related issues. A good technology plan includes certain components. These components and related issues are presented in the order in which they generally appear in published technology plans.

However, this does not imply that the order used in this guide is the best or the only possible choice. Likewise, not all components listed may be necessary for all plans; some plans will require additional sections not covered in this guide. Please keep in mind that planning is a fluid, ongoing process. The written plan should be an articulation of what is believed, what exists, what is to be, and how goals are to be achieved.

Implementation in Progress

Implementation is a part of the continuous action that starts with the first technology planning decision. It begins the fulfillment of: 1) the vision, 2) the mission, and 3) the purpose of the planning process. It is ongoing and should improve as you evaluate your activities and revise your policies. As you initiate the implementation phase, consider the following:

- Always keep the vision and mission statements in mind as you progress toward your planning and implementation goals.

- Provide opportunities for everyone to be involved.

- Provide a flexible environment that nurtures change and encourages risk-taking to learn technology skills and use technology.

- Develop and maintain resource relationships with technology experts to be aware of emerging technologies.

- Do not panic if something is not going the way everyone thought it would. Re-evaluate! Realize that you are involved in a process that requires constant monitoring and adjusting.

- There should be a definite schedule or timeline in your plan for carrying out the various phases.

- Someone must be responsible for implementing the plan (this could and should be more than one person).

- Decide what motivational measures will be used to encourage teachers or administrators who are reluctant to carry out the program.

Ongoing Evaluation

Evaluation is a continuous, ongoing process. This process is both informal and formal. The informal component goes on in the planners' and implementers' minds as the planning and implementing process begins and continues. The formal component takes place at intervals throughout the process. The informal is more intuitive; the formal can be done with established criteria.

In all planning processes some plans work well and others not so well, relative to various factors, including the planning and working environment as well as the people involved. A purpose of the evaluation process is to determine what is working for your institution and what is not, then revise accordingly.

One public school system deliberately decided not to include a timeline or a budget in their plan. They also decided to report annually on progress in implementation, review, revision, monitoring, and evaluation.

- Revisit and revise the plan at least annually.
- Elicit feedback and suggestions continuously.
- Establish a feedback loop into the implementation process based on the vision and mission that is ongoing.
- Consider these questions: What has been and is being accomplished? (implementation) How can it be improved? (evaluation) What is our next step? (revision)

Cover Sheet

An attractive cover sheet is vital in providing that important first impression. Think of the cover sheet as the front door to someone's home. It should be visually inviting,, that the reader is drawn to open the document and see what is inside. The cover should be enticing. Just imagine how much more appealing a magazine cover is when it is asplash with color and meaningful graphics than if it were bland—with only the title shown.

In developing a cover sheet consider the following:

- Utilizing different typefaces
- Inserting graphics
- Adding color
- Including the name of the institution for which the technology plan is designed

Title Page

An attractive and informative title page is an important component of a technology planning document, conveying a strong, positive message. In developing a title page consider:

- Including the state/province in which the institution(s) is located
- Including the date the plan was submitted
- Including who the plan was submitted by (not necessarily every name on the committee, but the name of the committee as a whole) (example: advisory committee)
- Including the superintendent (if applicable)
- Including an address and phone number for additional information
- Including the e-mail address or the web site address for a contact person in the institution

Table of Contents

The Table of Contents is a crucial component of a planning document because it provides a guide for readers. In developing the Table of Contents the following points may be considered:

- Including all sections of the document
- Being neat
- Being attractive
- Having page numbers so that readers can go directly to a certain topic
- Having appropriate indentations
- Including leaders (leader dots)
- Including headings and subheadings, if needed

Acknowledgments

An acknowledgments page provides the opportunity to recognize those persons and groups who have contributed their time, efforts, and resources toward the completion of the technology plan. While this section should be kept as short as possible, it should at least recognize those who provided financial support, leadership, technical expertise, review or editing of the manuscript, and the publisher of the finished document.

If the acknowledgment is for a specific person or organization, then that contribution to the plan should also be cited. If the acknowledgment is for the contribution of a group whose members are also to be recognized individually, it is often best to list these members in alphabetical order. Consider ending this section with a general acknowledgment so that all supporters of the plan can feel that their efforts were appreciated.

Executive Summary

The executive summary serves essentially as an abstract of your technology plan. It provides the reader with a short overview of what the plan is, how and why it came into being, and what it hopes to accomplish. Like an abstract, it should be placed near the beginning of the planning document so that it is easy to locate. The summary should be kept brief, and should communicate quickly the major points of the plan to the reader. A maximum length of two pages is recommended. It is important when creating the summary to remember that, for many readers, the executive summary will be the only part of the plan that they read in its entirety. This means that the summary can be potentially the most important part of your technology plan for those readers as it will provide them with their only impression of it.

Vision Statement

A vision statement expresses your thoughts about what you want to happen in the future and should be written in broad terms. In preparing a vision statement, sufficient time, support, commitment, teamwork, and flexibility are required in order to convey a positive attitude toward the use of the technology. This component, with the mission statement, is the basis of everything else that you will do. It should be thought out carefully and included in all technology plans. When constructing a vision statement, consider the following:

- What roles do we desire and see for the future of technology and education in our institution and community?
- What will our classrooms of the future look like and include?
- How will instruction be delivered?
- How and at what levels will students achieve?
- How will the community be involved?
- What do we envision for our learners in the future?

Mission Statement

A mission statement describes your purpose and your plans for fulfilling your vision for technology in education. This component should be included in all technology plans. When composing a mission statement, consider the following:

- What must we do to make our vision come true?
- What is learning, according to our definition
- What does learning look like while in progress?
- What is different about learning with technology?
- What must we do to develop, implement, and continually improve the quality of instruction and learning using technology?
- What are desired student benefits and outcomes?
- What characterizes our learners?

Demographics

Demographics give the blueprint of the area surrounding the institution that will be implementing technology into its program. The demographics of a community or region contribute to the general quality of the learning experience.

Demographic data should cover all relevant aspects of the community/school(s). This section is important as demographics may influence potential industrial and residential development. When developing a statement of demographic composition, the following points may be considered:

- Location
- Area
- Population distribution by ethnic group, gender, and median age
- Percentage of professionals, blue collar workers, unemployed, etc.
- General accreditation/degree levels of teachers
- Income: household and per capita
- Student enrollment, history, and projections
- School building distribution

Committee Membership

Every strong technology plan has several committees made up of key personnel. Committees should include:

- Students
- Parents

- Faculty members
- Department Chairperson
- Administrators
- Business persons
- Librarians
- Administrative support personnel
- Technology professionals

There should be room for outside consultants and other interested persons. The above list is only for consideration. In choosing committee members, factors to consider would include a past history of willingness to invest their time and interests in educational endeavors; past committee memberships; strong indications of interest in this area; formal or informal leadership positions in the community; persons with known influential positions; and vocal/ energetic trendsetters. However, it is imperative that all groups be represented.

Points to consider when establishing and working with committees include the following:

- A leader who is assertive, committed, self-starting, and flexible should be chosen for each committee.
- A recording secretary is essential. This person will be responsible for recording all meetings and distributing the minutes.
- Meetings should be scheduled on a regular basis at a time that is convenient for the majority of members.
- The leader should be able to delegate authority to those in each committee. Committee members should be given job descriptions so their roles and responsibilities will be clear.
- Job descriptions for the technology coordinator as well as other key personnel should be included in the technology plan. An organizational chart may be useful.
- Committee members should be encouraged to visit other campuses in their district, as well as other school districts, to compare existing technologies.

General Introduction

- Capacity: number of schools, students, faculty members

- History of committee: committee's beginning, who is involved, stages of committee, and its activities

- Short-term and long-term goals

- Schools organizational structure

- Purpose of the school in the community

Data Collection, Analysis and Reporting

Consider starting data collection with students and teachers as end users of instructional technology; this would aid in discovering how to apply technology to their specific responsibilities and working situations. This concept would also apply to other staff and personnel.

Data are likely to be used and / or reported in a variety of locations within a technology planning document. Data are necessary for many reasons including, but not limited to:

- Describing the current status of programs, courses, student achievement, technology, infrastructure, and other existing situations

- Determining the needs of clientele, identifying standards, and discovering opportunities and problems

- Formulating and fine-tuning values, visions, missions, and goal

- Deciding how to fulfill needs, implementing plan steps, and accomplishing specific objectives

- Controlling the process, evaluating results, and revising plans

Data may be of many types, for example: demographic, descriptve, subjective, objective, and many others. Data may be collected from existing records, surveys, observations, and physical measurements. Data may describe attitudes, abilities, capabilities, status and characteristics of people, processes, curricula and other soft items, hardware, equipment, budget, finances, and other entities

Data may be collected from various individuals at various locations. For example: the planning committee should visit all sites; office staff may extract information from student records; and students, teachers, and others can keep logs. Data may be analyzed by a variety of analytical, graphical, and holistic techniques. The types of analyses employed will depend on the data collected and the questions to be answered. It is advisable to obtain the aid of a skilled researcher / evaluator.

Interpretation and dissemination of data are equally important. Periodic reports throughout the planning process will be necessary. It is important reports be accurate, clear and concise.

Reports should be tailored to the reader. An interim report to the district superintendent should look very different compared to a technology newsletter for parents. The data dissemination portion of the plan document should reflect the format and printed quality of the rest of the document, that is, very professional.

When collecting, analyzing, or reporting data for evaluation or other purposes, several considerations are important, including:

- Before any data are collected, make sure you know for which purpose you are collecting the data.

- Collect only data needed, but make sure you collect all the data you need.

- Collect data in an unobtrusive manner.

- Maintain confidentiality of respondents.

- Participation by respondents should be voluntary.

- Do not use data to prove a preconceived idea; use data to discover, describe, and provide other information necessary for decision making.

- All instruments and techniques should be sensitive to bias and diversity issues.

- Make sure that what is reported is logically derived from what is collected.

- Keep surveys and other instruments as short and easily interpreted as possible.

- In surveys and questionnaires, avoid questions which lead to preconceived answers Questions should not restrict input; open-ended questions are generally best.

Plan Preparations

The components listed under the Plan Preparations should be included in all plans and located near the beginning of the document. They are as follows:

- Goals - should say specifically what you plan to accomplish

- Objectives - how you plan to achieve the goals you have stated; state goals in measurable terms

- Timeline - states the period of time in which you are to complete the plan or goals; states approximate date(s) for completion of each phase; states major events with the use of graphics (i.e. charts and calendars)

Critical Issues

Numerous critical issues exist in planning for pragmatic use of technologies for instruction. A particularly effective strategy in preparing the section of your plan that deals with these issues is to assign different ones to committee members. You may want to assign a special task force to each issue, then let these people focus on a specific area. As the committee gives periodic progress reports, the entire committee can stay abreast of overall action. Sample issues to be considered in writing a plan should include, but are not limited to, the following:

Public Relations

The development of public relations is the process of strategically communicating with the people who are important to your ideas. Public relations programs can be big and expensive. They can also be small and inexpensive and still be effective.

There is no direct correlation between the amount of money you spend and the success of your program. The success of a public relations program depends more on what is happening within an institution than on the public relations effort, in the way that great wine starts with great grapes.

When developing a public relations program the following points may be considered:

- Determine your position in your institution. What makes you unique?

- Determine your key audiences.

- Consider other groups that may have a signific nt impact on your ideas: employees, the community, government agencies, educators, etc.

- Determine which media will best target your selected audiences. Media might include trade and technical publications, business press, television, radio, newspapers, and magazines. For special purposes, appropriate media might even be imprinted balloons, skywriting or racing cars. There are no limits except those imposed by who you are trying to reach and what you are trying to tell them.

- Formulate a strategic message to target audiences. Put together a plan outlining objectives, strategies, tactics, timeline, and budget.

- Good PR illustrates needs and creates desires for implementing technology.

- Go forth and communicate! Tactics involved in executing a public relations program are virtually unlimited. They include standard news releases, media liaison, press tours, and so forth, but they can also include direct mail, special events, contests, and speakers' bureaus.

The criteria for judging the appropriateness of a tactic include:

- Will the tactic support the overall strategic objectives?
- Is a key audience targeted?
- Is its cost justified by its potential e fectiveness?

Equipment

Choosing hardware should come after deciding curriculum and looking at available software. When choosing equipment, these are some of the questions that should be addressed:

- What equipment is available in the district?
- What budgets will be available?
- What instruction will be necessary for staff/students?
- What functions and capacities must the equipment possess?
- What will be the minimum specifications for the equipment?
- Is the equipment user-friendly?

When preparing to evaluate software, consider the following questions:

- Can vendors give demonstrations of current technology?
- Is the software user-friendly?
- How does the software meet curriculum objectives?
- What software is presently in use?
- Have you used the Software Publishers Association as a resource?

Implementation

Implementation as a part of the plan document answers the questions when and who is responsible for acting on the plan. This component can outline and include:

- The estimated timeline and proposed schedule for completing the various components of the plan
- The necessary steps involved for completing each component
- The person(s) responsible for each component and seeing that each step is completed at all levels of involvement

- Checkpoints for formal evaluation of implementation

- Relevant funding information (how much and when it will be available) or where to find this information

- References to the incentives proposed in the Technology Professional Development section of the plan

New and Emerging Technologies

This section of a technology plan describes innovations that are foreseen.

- Investigate and research to see if your current technology is up to date. If not, salvage what you can, scratch the rest, and start over again.

- Technology changes every day. Is your plan and the equipment you intend to buy able to change with it?

- Ask for volunteers or possibly assign several people who are interested in emerging technologies to report every so often on areas they think need to be addressed in the school's technology plan.

- If you cannot afford to buy new equipment as it comes on the market, ask around and locate someone who would demonstrate new technology to students and teachers.

- Encourage staff to attend state, regional, and/or national technology workshops or conferences so that they may remain current in technology. Provide them the opportunity to present their findings upon their return

Professional Development

As concerns have been expressed about technology planning, at the top of the list is professional development and training. The number one question is, "How can we teach everyone how to use technology effectively?"

It has been said that you train animals and develop people. Semantics are important to project your plan in a positive way. "Professional development" and "instruction" sound better than "training" to many people. Staff members seeking personal growth will be more motivated to participate when they hear "development."

A necessary component of an instructional technology plan should include technology awareness and skills instruction. The educational institution's professional development programs need to provide learning opportunities for all personnel by offering them instruction at workshops, conferences, etc.

Decide to make a full commitment to staff development from the start. As you prepare this component you might consider:

- What research should be done to see how much instruction the staff may need
- How much appropriate technology instruction is available
- What technologies should be included in the instruction, such as use of: projection technology; mobile devices; online learning; and computer networks
- Opportunities for personnel to attend professional development sessions (examples: Are substitutes provided? Are teachers penalized by losing sick or personal days?)
- How the district will reimburse or prepay for personnel to attend workshops, etc.
- Hiring a full-time professional development instructor who is not a "techie," per se, but who understands how to utilize technology in education
- Use of a "teachers-teaching-teachers" approach by reallocating time for technology-oriented teachers to instruct their peers.

Incentives/Reward System

Incentives are given to staff members as motivation to continue to learn and implement higher technology skills. Rewards are "compensation" staff receives for carrying out these objectives. Congratulate and celebrate technology learning achievement.

- Plan your budget so that money is allocated for the incentive/reward program. Make sure staff members are given a clear outline of expectations in order to receive the incentive/reward.

Possible rewards include:

- A cash bonus
- Trips to conferences, etc. (to learn technology and / or present a successful program that is being implemented)
- Extra personal days
- District or school achievement certificates presented at meetings to recognize staff achievements
- Recognition for innovators and early adopters
- Articles to the local newspaper or in a district newsletter
- Technology equipment as a reward for learning how to use it

Purchasing

Purchasing is the process of researching, comparing, and actually paying for equipment.

- Make sure everyone understands the rules and regulations involved in purchasing equipment and software.

- Unless you must take a certain bid, shop around for bargains. If it means saving money, beg.

- Do your research! Never purchase equipment without first knowing what you are going to do with it.

- Don't get so excited about buying equipment that you forget about the cost of software, repair, and maintenance agreements.

- Make sure the software/hardware you intend to buy meets minimum standards set by the state.

- *"The bitterness of poor quality is remembered long after the sweetness of low price has faded from memory."* - Aldo Gucci

Community Resources

Community resources do not always refer to money. Use the resources available that are unique to your community. Consider the following:

- You can save money by asking a company to donate the materials and/or labor needed to rewire buildings, etc.

- Instead of paying a consultant's or trainer's fee, ask a representative or company if they have someone who can do it for free.

- Ask industry or knowledgeable individuals to undertake the task of physically setting up and putting equipment on-line. If you accomplish this, consider sending a school employee who can learn by watching and helping.

- If your plan calls for extra lab time after school or in the evenings, ask for volunteers (who meet such criteria as understanding the program being used, etc.) to run or supervise the lab. This might ease a teacher's workload.

- Conduct brainstorming sessions with community members to discover some resources your community can contribute.

Legal Aspects

Legal aspects can cover a multitude of areas from pirating software to insuring that a state's or district's technology curriculum is achievable.

• Make sure ALL staff understand the copyright laws of technology materials.

• Make sure your district is using the minimum specifications for technology. If not, does your district realize they could lose state accreditation?

• Consider an Acceptable Use Policy to guard against e-mail harassment and access to pornography. Some schools take the positive approach by referring to these policies as Responsible Use Policies.

Curriculum, Instruction and Evaluation

Curriculum is what is learned by students. Instruction is the method in which curriculum is learned. Evaluation is the process of determining if curriculum goals and objectives have been met.

Learning may occur in the absence of teaching, but teaching does not necessarily mean learning has occurred! One must keep technology in mind when developing curricular goals and instructional and evaluation methods. While the established curriculum, instruction and evaluation do not necessarily have to change, they can be enhanced by integrating technology.

Curriculum and instructional methods can be a dynamic process by exchanging ideas among students, teachers, and other from around the world.

When developing curriculum, instruction and evaluation the following points may be considered:

- Establishing multiple objective areas such as cognitive, behavioral and personal development
- Instilling the realization that learning is not confined to the classroo
- Developing life-long learning skills such as critical thinking, information processing, problem-solving, studying, decision-making, communication and creativity
- Establishing global collaborative and cooperative learning experiences
- Developing instructional methods that meet individual students' needs, interests and learning styles

- Allowing students to express in multiple ways knowledge and skills learned
- Establishing a variety of evaluation methods
- Creating opportunities for accessing “real-life information and experience”
- Establishing methods in which students can contribute to and improve society immediately rather than at some future time
- Utilizing simulations and modeling programs
- Establishing immediate and multiple feedback
- Developing multidiscipline and multicultural learning environments
- Instilling the realization that the responsibility of learning is shared by teachers, parents, students, and the community
- Developing curriculum and instructional methods which include multiple intelligences, for example, Howard Gardner’s social understanding intelligence and Robert Sternberg’s experiential intelligence
- Developing ways in which students can evaluate and assist others in learning

Philosophy

A school’s philosophy should include making preparation and plans to accomplish goals and objectives. The plan will consist of several preliminary steps in order to reach the final stage. Consider the role technology has in the school and community and establish a plan for implementation. Time, support, commitment, teamwork, and flexibility are required to guarantee acceptance and implementation of the technology. Goals must be established to envision the future of the technology plan.

Teaching transferable thinking skills is important in preparing students to adapt to a changing environment. Each student should be furnished written documentation detailing specifi competencies achieved through participation in the educational program.

However, this would not necessarily include incidental learning experiences that occur outside the formal curriculum. In order to create a vision that encompasses the entire community, the vision for the technology plan must be written in broad terms.

The reason for inclusion of this section is to help a school determine, then place in writing for all to see, precisely the technology oriented philosophy.

Networking

A network is a collection of interconnected, individually-controlled computers, together with the hardware and software used to connect them. A network allows users to share their data and resources.

In order to provide equitable access to information for administrators, teachers, students, and parents in a state's or provinces' educational system, there must be a statewide information network. This network must integrate data, voices, and video and extend to every school district and library.

An effective statewide network will provide:

- Distance learning that enables students in rural areas to receive the same quality and breadth of courses as their peers in metropolitan districts

- Ongoing (inservice) instruction of teachers that is conducted without requiring teachers to travel

- Global connectivity to enrich the learning environment by allowing teachers and students to access leading libraries, access remote information sources (databases), and converse with other students and colleagues

An effective technology plan must be based upon an underlying infrastructure, the key component of which is networking. This element of the technology plan should encompass all local area, (i.e., intra-building) and wide area (inside and outside building) networks and the associated interconnectivity equipment and network operating system necessary to implement a fully networked computing and information technology environment.

Networking must be considered an essential part of technology plans. This element of a plan may be an advanced telecommunication system that provides the necessary electronic communication capabilities at all levels, from the classrooms, buildings, and districts, to the world. This system will provide two-way interactive video and data communication, two-way interactive data communication (Distance Learning), Internet connectivity (i.e. network, electronic mail, fi e transfer protocol, Google, World Wide Web), and voice-based information service.

Furthermore, the networking and the interconnectivity component of the technology plan must be designed and implemented so that it is capable of meeting the needs of the school, district, and state/province in the near future. Technology planning may consider the following: intra-building and inter-building connectivity; connectivity and access to the outside world; network hubs; Local Area Network (LAN); Wide Area Network (WAN); television distribution; satellite delivery; network operating systems and protocols; bulletin boards; Internet Service Providers (ISP); and on-line services.

Note: It is not the purpose of this portion to educate the planner or the committee about networks - many books and other resources exist to do that.

Maintenance

Maintenance may be defined as any repair or upkeep performed on equipment or facilities. A comprehensive maintenance plan is a necessary component of a technology plan. This comprehensive plan will ensure: longevity of the equipment; adequate staff instruction; and budgets that are cost effective.

When developing a maintenance plan, the following points may be considered:

- Solve maintenance problems before they arise by keeping printers, computers, monitors, and keyboards free from dust, grime, and foreign objects.

- Develop a budgetary process to provide for ongoing repairs.

- Train people (possibly two or three from each school) to provide repair services. (i.e., computer teachers, administrators, and frequent users)

- Provide regular updating sessions for personnel in order for them to stay abreast of current practices and techniques.

- Consider asking qualified and trustworthy persons such as parents, industry, business, or community residents if they would offer to repair and maintain equipment for free or at a reduced rate. (i.e., Partnerships with Businesses)

- Arrange printers, scanners, copiers, and other peripherals so that they are accessible for maintenance.

- When purchasing classroom equipment, consider asking for a contract that includes a warranty package and provides special training.

- Examine maintenance contracts carefully and be alert for any hidden costs.

- Maintain a maintenance log on each piece of equipment (i.e., date of service, who performed the service, next service date, equipment problem, what was done to solve the problem, and cost).

- Monitor all classroom labs to prevent maintenance problems.

- Train students to perform minor repair functions (i.e., printer jams, computer lock-ups, and mouse malfunctions).

- When purchasing computers, purchase extra equipment to keep as backups in case of an emergency (i.e., mouse, inside computer parts, and keyboard).

- Repair equipment as expeditiously as possible.

Special Needs Learners

Technology is an excellent tool that students with disabilities may use to access learning. When developing a technology plan one must provide for special needs learners. While the main focus may be on the disabled, the plan must also provide for learners who are classified as gifted or talented. The Americans with Disabilities Act of 1990 requires that all private and public schools, libraries, businesses, and facilities are accessible to people with disabilities. Of course, schools will comply with the mandate of reasonable accommodations, but they can do much more if they become familiar with the variety of disability categories and research the adaptive technologies which are available to assist in overcoming these disabilities.

The following are a few examples of why special needs learners must be considered when planning a technology program:

Visual Impairments

This can include students who are partially sighted or have low vision, as well as those who are blind. Problems include inability to see the screen, orient on the keyboard and read the computer printout as well as the inability to write and read printed information. Adaptive technologies include:

- Text to speech software
- Large monitors
- Braille embossers and printers
- Scanners and scan-reading software

Physical Impairments

This can include students who have limited or no use of their hands and who experience difficulty in writing, holding books or papers, and turning pages. Adaptive technologies include:

- Voice recognition systems
- On-screen keyboards
- Enlarged or mini keyboards, trackballs, joysticks, and Morse Code sip & puff switches

Hearing/Speech Impairments

Generally, students with hearing and speech impairments have little difficulty using computers, but they can still benefit from emerging technologies which include:

• Communications software which displays dialog on computer screens

• Speech output devices

• Visual displays and printouts

Learning Disabilities

Some disabilities that affect learning include dyslexia, dysgraphia, dyscalculia, language deficit and attention deficit disorder. Adaptive technologies are available to enhance the learning capabilities of students with learning disabilities.

Exceptional Students

Students recognized as gifted and/or talented create yet another challenge for schools. Educators want students to expand their knowledge base, and to develop creative and complex thinking processes, while challenging them to realize their full potential. Technology can be used in a variety of ways to improve the curriculum for talented and gifted students.

Access to the Internet can bring enormous resources into a school including, but not limited to:

• Weather maps and forecasting

• Astronomy and geography

• Electronic publishing and on-line technology

• Music, the arts, and literature

• On-line discussion and news groups

Programs of enrichment and acceleration usually involve the greatest amount of curricular adjustment, but they also have the greatest effect on student learning. Evaluations show that students enrolled in accelerated classes outperform non-accelerates of the same age and IQ by almost one full year on achievement tests.

All this information compels the planner to seek to create and maintain robust, expansive programs that challenge all learners. This allows every student the privilege of exploring learning vistas, regardless of personal disability or gift.

Community Involvement

Community involvement is described as the interweaving of the best efforts of both the community members and the educators in producing the highest quality environment, equipment, and facilities available for the education of our youth, our greatest natural resource.

When planning for the development of community involvement the following points may be considered:

- Discuss with community members how education has changed and how technology can play a positive role in transforming learning.
- Involve parents, grandparents, and community members, making them aware of the technology being used in the schools, by having Family Technology Night.
- Invite civic clubs to meet in the computer labs and have students show club members how to create electronic presentations.
- Invite the Board of Education to a “hands-on,” state-of-the- art learning workshop. The students can guide them on their first trip down the “information ighway.”
- Invite business leaders and corporations to the school for Business Technology Night. Students can design advertisements, tri-fold brochures, and electronic presentations for the various “adopted” businesses.

Implementing the above suggestions will accomplish the following:

- Form a bond between civic organization members and students
- Promote a community spirit
- Promote lifelong learning
- Encourage funding from corporate sponsors
- Promote pride in the school
- Promote “real-life” application of skills learned in the classroom
- Encourage the use of the latest and highest quality technology available

Security

Security is freedom from worry. By providing security you are protecting your computers, networks, personnel, and software from destruction, misuse, and harm. There are at least three areas to consider in the security area: security of data, personnel, and facilities.

Every security plan should be creative in investigating unique techniques/strategies for dealing with security. When developing a security plan, the following questions may be considered:

- Why do you need security?

  People Threat (human error, dishonest employees, disgruntled employees and hackers)

  Physical Threat (fire, water damage, electrical outages, vandalism, theft, viruses, earthquakes, etc.)

- Are budgeted funds sufficient to provide and sustain the type and level of security program you desire? Will budgeted funds be ongoing?

- What type of network security will be provided?

- What type of computer security will be used? How will the staff, students, and community members access computers? Will passwords be assigned?

- Will you hire someone to be responsible for data, program, virus, and network security?

- Should you have a Standard Operating Procedure (SOP) for handling security problems?

- Where should security systems be installed? Do you need security in each room? How will the staff, students, and community members access computers?

- Will passwords be assigned?

- Will you hire someone to be responsible for data, program, virus, and network security?

- Should you have a Standard Operating Procedure (SOP) for handling security problems?

- Where should security systems be installed?

  Do you need security in each room? Do you need security in each building?

- Do you need cameras to monitor people and equipment?

- Do you need to provide after-hours security for protection from theft or vandalism?

- Should media be stored and locked in a central location?

- Should measures be taken to prevent students from obtaining materials that are of adult content?

Funding

When developing an effective instructional technology plan, a committee should remember the importance of funding. The first step is to look at the school district and to assess the need. The dollars allocated should be shown as an investment rather than an expenditure. With both investments and expenditures, there is an initial outlay of dollars. However, with investment one gets back much more in return than the initial outlay. With an expenditure, one may never see the results of the outlay.

There are various concepts that can be addressed regarding funding:

- Budgets should include a technology line item to indicate that support for funding is an ongoing process
- Financial officers need to be involved in the funding proces
- Assurance that existing resources are used in the plan
- A needed vehicle for procuring funding
- A method for determining how to evaluate the impact and progress of the technology
- a vehicle for communicating steps for others to follow adapting the plan
- a process for coordination with other programs and projects
- that the teaching addresses the needs of all learners
- guidelines and a context for the insertion of new technologies

There are alternative techniques or strategies available in the funding process:

- Fund-raising activities
- Rent-a-student programs
- Sale of outdated technology equipment

There can be local financial support programs available for school districts. For example, banks can make low interest loans to a particular school as its partner-in-progress. Also, local universities can form partnerships with school districts. Partnerships can represent projects showing how resources and tools of the Internet can improve educational opportunities and develop parental involvement in grades K - 12. It is important to point out that this guide is not complete. This list, in conjunction with resources in your area, will provide funding sources in educational technology. New technologies will continue to emerge and must be funded continually to prevent the plan from becoming obsolete.

Fine Arts

The fine arts curriculum in the past often has been treated as an optional rather than an essential part of education. With the establishment of the "Goals 2000: Educate America Act," the arts is acknowledged as a core subject, as important to education as English, mathematics, science, foreign languages, civics and government, economics, history, geography, and other traditional "subjects."

Arts education cultivates the whole person. Education in the arts, in part, helps students to understand human experiences, past and present; learn to respect other's ways of thinking; learn to solve problems and make decisions; understand the influences of the arts; develop skills in analyzing, synthesizing, and evaluating; communicate in a variety of modes; and build skills needed for success in the workplace and in life. Furthermore, numerous studies show a positive correlation between a substantive education in the arts and student achievement in other subjects and on standardized tests.

A good education in the arts should provide a thorough grounding in a basic body of knowledge as well as the skills necessary to make both sense and use of the arts disciplines. To fulfill this objective, "National Standards for Arts Education" have been developed, determining what the nation's school children should know and be able to do in the arts. "Fine arts" may comprise numerous forms of visual and performing arts. The National Standards for Arts Education divides the discipline into four areas: Dance, Music, Theatre, and Visual Arts, realizing that each of these encompasses a wide variety of forms and subdisciplines.

These standards address competencies rather than predetermined courses of study and they are arranged by grade levels (K-4, 5-8, 9-12). With implementation of these standards, students in all grades are involved actively in comprehensive, sequential programs that include creating, performing, and producing as well as opportunities for study, analysis, and reflection. With the emphasis on sequential learning, each area is outlined by content standards (specifying what students should know and be able to do in the arts discipline) and achievement standards (specifying the understandings and levels of achievement that students are expected to attain in the competencies) for each of the arts, at the completion of grades 4, 8, and 12.

When developing fine arts the following points may be considered:

- Consult the "National Standards for Arts Education" with the goal of bringing together and delivering a broad range of competent instruction.

- A fine arts curriculum can help children develop in most of the seven types of intelligences: visual/spatial, bodily/kinesthetic, musical, interpersonal, intrapersonal, linguistic, and logical/mathematical. These are seven distinct learning styles identified by Howard Gardner of Harvard University. Gardner has documented "the extent to which students possess different kinds of minds and therefore learn, remember, perform, and understand in different ways."

•Integration of art into the teaching of other subject areas causes the related learning to be more relevant.

•Participation in the arts elicits pleasure as well as intellectual and aesthetic stimulation.

•Teachers can use technology to enhance both the creation and the understanding of all areas of the fine arts, including movies and animation.

•Use of multimedia aids learning.

•With the use of multimedia development tools, students can learn through construction of their own projects.

•Examples of the use of computers, scanners, camcorders, printers, and any new technologies that allow for exploration and creative design include the following:

Students can capture, process, and manipulate words and images using various software programs.

Students can compose, revise, edit, and print music using a MIDI (Musical Instrument Digital Interface) keyboard connected to a computer containing composition software.

Students can explore all areas of the arts using CD-ROM disks: styles, periods, artists/ composers, and cultures.

Students can visit museums around the world or participate in a worldwide art exhibition of student art.

•Interesting and engaging technologies can intrigue a student, but it is only through instruction, study, and practice that a student becomes competent. With increasing levels of competence a student becomes more empowered and productive.

•Students need to be well guided toward choosing, compiling, and arranging materials appropriate to specific artistic ends.

•Success is measured by how well students achieve artistic and intellectual objectives, not by how adept they are in using a certain technology.

•Teachers and students can use the Internet as networking tools to discuss art-related subjects and events.

•Creative and continual utilization of community resources is a good means of exposing students to the arts:

Partnerships with area arts organizations can be developed.
Teaching alliances with art specialists can be formed.

•Address the issues of teacher preparation and professional development in the arts.

•Consider grants funding via arts organizations.

Support

Support is the provision of tangible or intangible appreciation, motivation, or rewards for an idea, a situation, a product, or a person. Everyone involved in the planning process is expected and should provide some sort of support, depending on his/her role and/or position, in order to gain and maintain the maximum support possible. Support includes, but is not limited to, the following: state legislators, school district leaders, schools administrators, teachers, community members, and students. Support must begin with the birth of the technology plan idea, maintained through the process, and nurtured to an endless period of time.

When providing support, the following should be considered:

- Financial support to purchase hardware and software
- Financial support for the infrastructure
- Training for faculty and staff members
- Provision of incentives to teachers who participate in inservice training programs
- Re-evaluation of teachers' routine tasks in order to have more time to help peers and students
- Provision of technical support to maximize the use of the hardware and software
- Provision of consultation and advice for safety and related legal issues

Lifelong Learners

A lifelong learner is a person who, having recognized the importance of education and technology, continues to search for new and exciting ways to accomplish life's tasks.

- Emphasize that being a lifelong learner does not necessarily mean pursuing formal education and research.
- The district should provide opportunities for learners other than students by designing evening classes that allow the community to use the technologies.

Facilities

Facilities relate to anything needed to house or power the chosen technology equipment. When planning for facilities, consider the following:

- Location
- Buildings
- Rooms
- Wiring codes (example: In older buildings, can fuse boxes handle the additional power needed to run the equipment?)

- Data lines
- Security
- Furniture
- Ask teachers' opinions about classroom layout
- Do you want built-in furniture so that there is no exposed wiring, etc.?
- Fire codes
- Panic buttons

Other Critical Issues

There are other critical issues which may be considered when developing a technology plan:

- Obsolescence
- Environmental Issues (conservation)
- Access/Equity
- Ergonomics (making equipment and furnishings user-friendly, e.g., table height, comfortable seating)
- Standards
- Communication

Evaluation

Objectives and their delivery are of paramount importance. However, without evaluation, only gut-feelings can indicate if effort and resources expended have produced the desired results. Evaluation should be built into the planning cycle and not be an afterthought. Also, evaluation should be continual and not just at the end of a cycle. Every step in a plan should be evaluated. Evaluations will be performed at varying points in the planning cycle. The type of evaluation, its detail, and duration will depend on the step being evaluated and the decisions that have to be made that surround or interact with that step. As in reporting data, the purpose of the evaluation and the intended audience are prime considerations. It is prudent to seek the advice of an evaluation expert. Evaluation may be covered in multiple parts of a technology plan, e.g., implementation plans, critical issues, needs analysis, reporting, and other sections. In addition to other sections, evaluation usually warrants a dedicated section to clarify evaluation purposes and procedures.

Budget

The budget shows allocation of available funds and their sources. Purchases and other expenses incurred during implementation of the technology plan are included. This information could be displayed in chart form showing budget breakdowns and total costs.

- The actual budget may be included in the appendix.
- This section may include a narrative justification or explanation of various components in the plan.

Bibliography

The bibliography is a collection of sources that have been used to compile data and which have been referenced in the report. (examples: books, periodicals, contacts, interviews, Internet sources, etc.)

Glossary

The glossary is a list of all obscure or technical words used throughout the plan and their meanings. The glossary is arranged alphabetically.

Appendices

The appendix section allows you to accumulate many documents and source information that have assisted you in the planning process. Here you should include samples of your surveys, staff development sessions, committee minutes, inventories, and committee members' resumes.

The appendix is a section to which you can refer throughout your plan without having to include the original documents at the specific points where you mention them; you can direct the reader to a particular appendix.

An especially good appendix entry enumerates activities in which most school personnel are involved. This will give people an opportunity to see their name in print and to give evidence of the widespread input you had in developing the plan. Use this section wisely.

Index

The index is an alphabetical list of names, subjects, titles, etc., giving page numbers where references are made. It is generally placed at the back of the plan.

The Guidebook you have just read gives an excellent introduction on the mechanics of what a Technology Use Plan does and how it can flow from one element to the next. For concrete examples of TUPs, see appendix A in this workbook and go online for hundreds more - URL's to a few are listed in appendix E at the back of this workbook.

Guidebook Questions

You have two options in completing these guidebook questions:

Fill out and submit your responses using Google Forms. The link for these Guidebook Questions link on the course website. (www.tup.steveyoungfpu.net). A copy of your completed form will be e-mailed to you after submitted.

OR

Word process your responses and save the document to be uploaded at the end of the course using the 'portfolio submission' link on the course Moodle page.

1. After reading the Guidebook, how would you assess the scope and complexity of developing a technology use plan?

2. What level of technology use planning has your department / grade / school implemented thus far? How does it compare to the detail of planning called for in the guidebook?

3. Based on the above answer, how much more planning and work would it take to complete a technology use plan for your department / grade / school? Can you build on work already done by people at your site / district?

4. Using the collective experience of people at your site, do you feel it is possible to develop and implement a technology use plan? Why or why not?

5. A technology use plan is a tool that can be put to many uses. Describe several ways that a plan (developed at your site) might be used.

6. What single element of a technolgy use plan do you feel would be most important to implement? Why?

7. What is the level of motivation of your collegues to become involved in developing a technology use plan?

Planning Committee Membership

Ideally, a focused, effective, and productive planning committee is comprised of various members coming to the table, willing to share their resources and expertise ... for the "long haul." As you have seen by reading the Guidebook, developing a TUP is a great deal of work. A large and diverse body of people working together on a plan tends to bring a sense of ownership to all involved. A plan presented to teachers, administrators and parents should be warmly received - even welcomed - if it was drafted by the very same.

Using the *Planning Committee Membership** form, define your "Team" - it could be those already on an existing planning committee, colleagues who expressed willingness or interest in participating, or those you *wish* you could call on if you were assembling a "Dream Team" of your own. Consider incorporating potential community stakeholders. Be creative and draw on your resources, either real or imagined! Once completed, return a copy of your roster.

Record your responses and save the document to be uploaded at the end of the course using the 'portfolio submission' link on the course Moodle page.

Points to consider when establishing and working with committees include the following:

A leader who is assertive, committed, self-starting, and flexible should be chosen for each committee.

A recording secretary is essential. This person will be responsible for recording all meetings and distributing the minutes.

Meetings should be scheduled on a regular basis at a time that is convenient for the majority of members.

The leader should be able to delegate authority to those in each committee. Committee members should be given job descriptions so their roles and responsibilities will be clear.

Job descriptions for the technology coordinator as well as other key personnel should be included in the technology plan. An organizational chart may be useful.

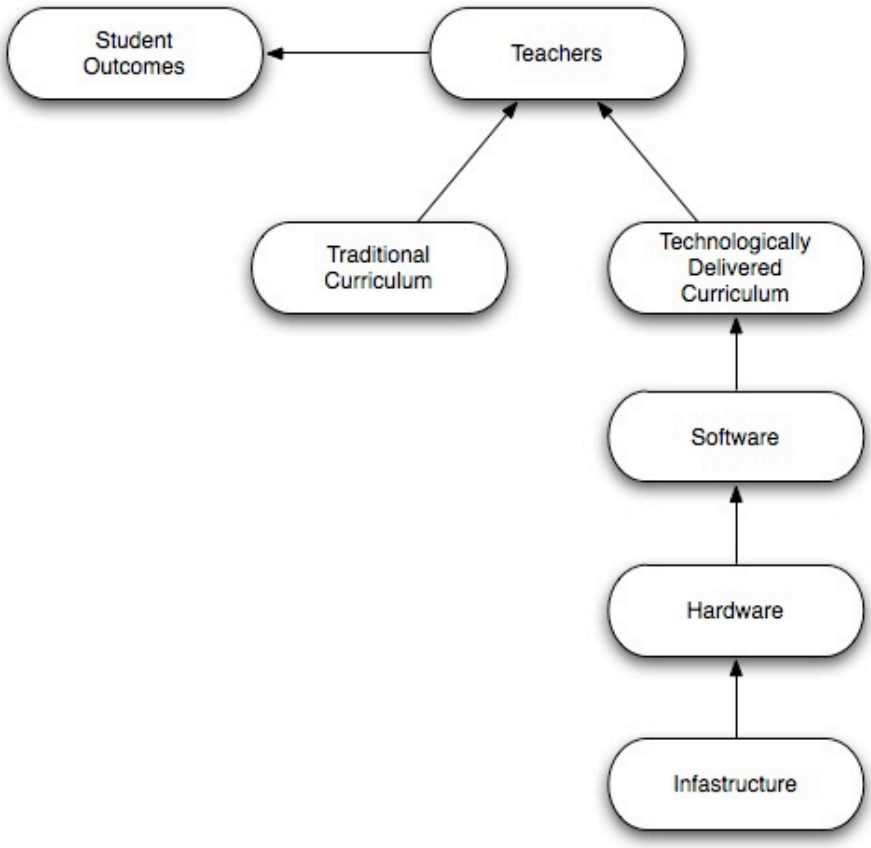
Committee members should be encouraged to visit each campus in their district, as well as other school districts, to compare existing technologies.

Committee Member	Name(s)	Expertise / Background
Faculty		
Administration		
Classified Support		
Technology Specialists		
Students		
Parents		
Community		
Business Persons		
Laypersons		

*Download the form (and all other forms) by clicking on the 'Course Forms' link on the course website, www.tup.steveyoungfpu.net

The technology committee's job is to research, compile, write and edit the technology use plan. Appendix A contains a rather brief example of a TUP. Appendix E contains URL's to several other plans for you to review. The inclination of some would be to use one of these plans (or one like it) as their own. This would certainly save a lot of time and effort. If the end result is to have 'a plan' on file for your school, this may be an option. But if you want "Your Plan" - tailored to *your* school, there is no better option than to compile it in-house. The process of research, deliberation and thoughtful formulation is perhaps more important than the plan itself.

The best plans are oftentimes reverse engineered. Your first priority should be the establish ment of student outcomes and learning objectives, rather than calculating how many computers and how much software you can purchase yet remain within budget! Next, determine how extensive your plan needs to be. If it is your goal that the plan cover a single classroom, a grade level, department, or school, the plan may be a simple explanation of curriculum integration and student use.



District-wide plans can grow to hundreds of pages in length. It is beyond the scope of this 3 - unit course to guide you through such an exhaustive process. Doing so would necessitate addressing, in great detail, each and every complex topic required taking months, if not years, to complete. This is the start - the foundation and first few steps in providing the best possible education for your students.

Technology Inventory

Fill out and submit your responses using Google Forms. The link for the Technology Inventory is on the course website. (www.tup.steveyoungfpu.net). A copy of your completed form will be e-mailed to you after submitted.

If you prefer to use your own method of recording our inventory (word processed or spreadsheet), you are welcome to do so. The completed form / document can be uploaded at the end of the course using the 'portfolio submission' link on the course Moodle page.

I have copied the survey here for reference.

Before you get started you need to familiarize yourself with the current condition and capabilities of your physical plant so that you can plan for:

- upgrading building wiring and temperature control
- imposing new security measures
- making provisions for equipment repair and upkeep
- ongoing training of teachers, administration, and staff
- budgeting for supplies and maintenance

Conduct an inventory of available technologies in your classroom (if you haven't a classroom, inventory that of another, or the room / area where your technology is located, ie computer lab). Note number(s), type(s), approximate age and any other information pertinent to your purpose. Include items such as those listed below, along with any additional items you encounter in the course of your inventory.

_____ Number of rooms addressed:

_____ Computers - PC / Mac / Chromebook / iPad

_____ Printers

_____ Internet access

_____ Video projectors / smart boards

_____ Television sets / monitors

_____ Peripherals (list each number of each type): cameras, scanners, robotics kits, etc.

_____ Other (specify) _____

Technology Survey

To know how far it is to your goal, you must know where you are now! A survey can help answer that question. What technology is available at your school? Where is it located? How is it being used? Who is proficient in its use? Who is your resource when questions or problems arise? Data collection with students and teachers as end-users of instructional technology can reveal much in terms of discovering how to apply technology to specific teaching and learning situations.

Data may be analyzed by way of a variety of analytical, graphical, and holistic techniques. The types of analyses employed will depend on the data collected and the questions posed.

Interpretation and dissemination of data is equally as important as collection. If, upon completion of this course, it is your goal to proceed to developing the remainder of the TUP, keep in mind that accurate, clear, and concise periodic reports (concerning data and other items) throughout the planning process is necessary. It is important that reports be tailored to the reader. A preliminary report to the principal should present very differently compared to a technology newsletter to parents.

As with most aspects of a plan, whenever possible the committee should be involved in drafting a survey. This not only insures 'buy in', but also provides a broad range of experiences on which to base questions. A reading specialist will ask different questions than a computer lab teacher. Both points of view are valid.

A survey can also be a learning tool. If you ask 'what is your favorite word processor' you assume that people have been exposed to several. This may not be the case. Staff in-services (perhaps based on a survey) will offer a more informed basis on which to answer questions.

After reviewing the sample surveys on the following pages, (using them as a guideline if you wish) **develop or adapt a survey of your own,** either independently, or with the assistance of your committee (if you have assembled one). Google forms is an effective platform for an informal survey.

You will then be asked to **distribute your survey** then **evaluate / analyze the replies** of those who participated.

When creating your survey, consider where you plan to 'go' with this information and how the data collected relates to the formation of the overall plan. More is not always necessarily better so you may wish to keep your surveys brief and to the point, with relevance to your overall objective.

Survey Example # 1 - Staff Survey on Technology Needs

Please circle your grade level or assignment:

K 1 2 3 4 5 6 Middle School High School Other (specify)_____

Do you have regular access to a computer at home? Yes No

If yes, please indicate brand(s) and model(s).

- ☐ Apple Macintosh
- ☐ Windows-based Computer
- ☐ Chromebook
- ☐ iPad

Respond by circling the number which corresponds to your feelings about the following. If desired, expand on your responses on a separate page & return with this survey.

Strongly Disagree	Disagree	No Opinion	Agree	Strongly Agree
1	2	3	4	5

1.) It is worthwhile for students to use technology.
1 2 3 4 5

2.) It is worthwhile for teachers to use technology.
1 2 3 4 5

3.) I have the ability and/or motivation to learn about technology.
1 2 3 4 5

4.) Learning to use technology is worth the effort.
1 2 3 4 5

5.) I can “touch type.”
1 2 3 4 5

6.) The use of a computer increases productivity.
1 2 3 4 5

7.) Classroom teachers are the best person to help students learn with computers.
1 2 3 4 5

8.) I am comfortable with an Macintosh Computer.
1 2 3 4 5

9.) I am comfortable with a Windows computer.
1 2 3 4 5

10.) I am comfortable with a Chromebook computer.
1 2 3 4 5

11.) It is part of my job to incorporate technology into my classroom.
1 2 3 4 5

12.) Computers can be utilized in all subject areas.
1 2 3 4 5

13.) Computers promote creative thinking.
1 2 3 4 5

14.) Computers can be effective tools in cooperative learning.
1 2 3 4 5

15.) Please indicate your comfort level in using the following equipment:

	Uncomfortable	Comfortable	Very Comfortable
Video projectors	1	2	3
Smartboards	1	2	3
iPads	1	2	3
Video & still cameras	1	2	3
Mac/Windows Computer	1	2	3
Internet services	1	2	3
Networked Printer	1	2	3
Chromebooks	1	2	3

16.) At what grade level do you feel should computers should be introduced? _____

17.) At what grade level should keyboarding skills be taught? _____

18.) What types of student management tasks would you like to computerize? (circle all that apply)

- ☐ Grade reporting
- ☐ CUM folders
- ☐ IEPs
- ☐ Collection of Money
- ☐ Attendance
- ☐ Other (please list) _____

19.) If a site / district computer lab were available to you at convenient times, how likely is it that you would use it for professional and/or personal growth?

Certain Possibly Unsure Unlikely

20.) Personally, what approach(es) would be most effective for you to succeed in acquiring new computer skills? (circle all that apply)

- ☐ Lecture with demonstration
- ☐ Instructor-directed “hands-on” experience
- ☐ Self-directed “hands-on” experience
- ☐ Other _____

21.) To better utilize technology in my classroom, I would be willing to attend inservice training held: (check all that apply)

- ☐ Before school
- ☐ After school
- ☐ Lunch time
- ☐ During the school day with release time
- ☐ Summer
- ☐ Saturdays
- ☐ Weekday evenings
- ☐ Training days

22.) Given adequate instruction and software, how would you like to use computers in your classroom? (check all that apply)

- ☐ Drill and Practice
- ☐ Enrichment
- ☐ Remediation
- ☐ Cooperative Group lessons
- ☐ Teacher tool in whole group instruction
- ☐ Keyboard and other computer skills

23.) Ideally, what would you like a computer to do for you? (please be specific)

24.) Speculate as to how your district/site managers could encourage and support integration of computers into your classroom?

FOR TEACHERS AT SCHOOLS WITHOUT COMPUTER LABS

How often is a computer available for student use (hrs./day/wk./mo.)?

On average, what percent of that time are computers being used by students?

Who is responsible for teaching and supervising students using computers?

FOR TEACHERS AT SCHOOLS WITH COMPUTER LABS

How often do your students utilize the computer lab?

Typically, how long do your students spend in the computer lab?

Other comments or concerns:

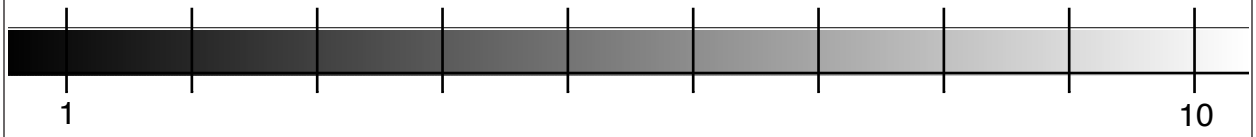
_____
_____
_____
_____
_____

Survey Example # 2 - Staff Survey of Technology Skills and Needs Assessment

School: Grade/Department: _____

This questionnaire has been developed by _____ in an effort to determine your opinions, interests and computer knowledge. Respecting your time, we've tried to streamline its completion. If more than one response applies, you may check more than one box. Please return the completed questionnaire to _____ by _____. We are aiming for 100% participation, so thank you in advance for your cooperation.

Circle the area on the chart below that best describes your technological savvy.



Computer Phobic Average Expert

Your Comfort Zone:

1. What computers are you comfortable using? __Windows __Macintosh __Other

2. Do you have a computer at home? __Yes __No

   Which one(s)? __Windows __Macintosh __Chromebook __iPad __Other

3. Do you have daily access to a computer at school?__Yes __No

   Which one(s)? __Windows __Macintosh __Chromebook __iPad __Other

4. If computers are available, about how often do students use them?
   - ☐ all day
   - ☐ several periods/day
   - ☐ once a day
   - ☐ several times/week
   - ☐ almost never

5. Do you use __the computer lab? __mobile lab? __classroom computer?

6. Do you buy software for your classroom out of your personal funds?
   __Yes __No

   If yes, approximate dollar amount you've spent in last two years: _____

7. What kind(s) of software do you use?

- ☐ Word processing
- ☐ Database
- ☐ Spreadsheet
- ☐ Graphics
- ☐ Drill & practice
- ☐ Demonstration
- ☐ Science
- ☐ Math
- ☐ Enrichment
- ☐ Teacher use
- ☐ Internet (browser)
- ☐ iPad apps
- ☐ Other: _____

8. Have you had any computer training? __Yes __No
If so, where? __At School __Home __Friends __Other (describe)_____
On what machine(s)? __Windows __Macintosh __Other

9. What are your school's needs in:
Hardware? _____
Software? _____
Technology Staff? _____

10. Are you familiar with or would you like know about the following items?

	Familiar	Want To Know More
Scanners	____	____
Video Projectors / Smartboards	____	____
Handheld devices (iPods, etc.)	____	____
CD-ROM	____	____
Video / Photo Editing	____	____
Web Page Design	____	____
Internet Use	____	____
Online Encyclopedias	____	____
Operating Systems	____	____
Networking	____	____

Other - (specify) _____

11. Would you be interested in a technology theme for the next professional development day? ____Yes____No

12. Do you think there is a need to teach students proper keyboarding techniques? ____Yes ____No
If yes, at what grade level should instruction begin? Grade _____

13. Would you like to be provided with materials for technology - based lessons which follow standards?

14. Wish list for technology. Prioritize each as follows using the following scale:
1 = Important 2 = Somewhat Important 3 = Not Important

____ After school teacher workshops in technology

____ Staffed computer lab available after school

____ Technology mentor teachers in each building

____ Computer in teachers' prep room with laser printer

____ Site computer advisor

____ Computer in classroom

____ Electronic mail for staff

____ Electronic mail for students

____ Access to CD-ROMs and DVDs

____ Access to high speed internet

____ On-Line homework assignment listing for parents and students

____ Staffed computer labs

____ Staff available in computer lab

____ Enough computers for entire class in computer lab

____ After school technology enrichment classes for students

____ Learning more about software

____ Software to perform specific functions

____ Software requests - List those desired: _____

For Special Education teachers only:

Do you use the computer to help meet the goals of an educational plan?

____No ____Yes

If so, how?

_____

_____

_____

_____

_____

_____

_____

For all staff members:

Please fill in any additional thoughts that you might have regarding the use of technology in your school.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Analysis of Survey Findings

As part of your course download, you will find a 'Survey Findings' form which can be opened in any word processor. The completed form / document can be uploaded at the end of the course using the 'portfolio submission' link on the course Moodle page.

How many surveys were sent out?

How many were returned?

How will you use the information collected in your survey? Will it influence your planning?

Will it influence your thoughts on proceeding on to develop and implement a comprehensive technology use plan? If so, how? If not, why?

Needs Ranking - "40 Questions"

Complete this form based on the 40 questions posed on the next 2 pages. This may be an individual assignment or shared among committee. This exercise will assist in identifying strengths, weaknesses and your resources when developing a plan. Use attachments if needed. Choose any 10 (of the 40) questions from the areas in which you and/or your committee are ***most*** knowledgeable. Designate a leader in that specific area/topic, from where or whom information/expertise would be gathered/generated, and how/where the findings would be integrated into a plan

As part of your course download, you will find two 'Needs Ranking' forms which can be opened in any spreadsheet. The completed forms / documents can be uploaded at the end of the course using the 'portfolio submission' link on the course Moodle page.

	Question #	Who will provide leadership?	Source of expertise?	How will the data be obtained?	How will the information be used?
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

Use the other Needs Ranking' form to address areas in which you and/or your committee are ***least*** knowledgeable. Indicate who you would go to as a resource or for guidance in that specific area/topic, how you would tap in to this individual's expertise and how/where the findings would be integrated into a plan

	Question #	Who will provide leadership?	Source of expertise?	How will the data be obtained?	How will the information be used?
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

"40 Questions"

1. Why use a technology use plan?
2. Any prior experience developing a technology use plan?
3. What are some possible goals for planning?
4. What are your objectives?
5. What kind of time line will exist for this plan?
6. Who should develop a technology plan for your school?
7. What should be the makeup of the tech use planning committee?
8. Is there a need for consultants? Why?
9. What should be the qualifications of a technology plan coordinator?
10. What plans for technology do we currently have?
11. Should you base your plan on needs indicated by surveys or based on what you believe is needed?
12. Who provides support for a new technology plan?
13. What planning aids are available?
14. Will the plan be easy for readers to understand or interpret?
15. What is the role of technology in education?
16. Which technologies do we want to select?
17. What computer and other technologies do we need to request?
18. Will all student populations have equitable access?
19. What infrastructure is needed? (mechanical, electrical, furniture)
20. What personnel is needed? What training do they need?
21. What systems, support, maintenance will be needed?
22. What funds and budgets will be needed?
23. What grade level(s) and how many students do you wish to plan for?
24. What sources of funding have you considered?
25. Will the plan be learning centered or technology centered?
26. Are you going to have a computer lab? What will be taught in the lab?

27. Is funding available?
28. What should students, staff and administrators be able to do with technology?
29. How will teachers integrate technology into the existing curriculum?
30. How will teachers know how to use technology effectively?
31. What does the teacher need to learn about the plan?
32. During what hours will the facilities be available to the students/community?
33. Who is responsible for enforcing the plan?
34. How specific must you be in order to meet the needs of a good instructiona technology plan?
35. How will your site plan tie in with other school plans within your district?
36. Is it possible to have a technology based curriculum in place within the next five years?
37. What kind of technology-driven curriculum will be developed so all learners will be challenged academically?
38. What type of network will be suitable for this school?
39. How will software be chosen?
40. Have you made allowances for software licensing?

More than likely you feel there remains many essential or critical questions omitted from the original list of "40 Questions." If so enter them below then incorporate them in to the "strengths" and "weaknesses" categories when completing the Needs Ranking project.

41. _____ .
42. _____ .
43. _____ .
44. _____ .
45. _____ .

*** - I will consider your additional questions for 'Extra Credit'!**

The TUP Vision Statement

The vision statement, also known as a mission statement or philosophy statement, is a critical part of your plan. The following pages contain examples of vision statements, and are intended as springboards for discussion within your committee or food for personal thought.

Again, keep in mind that the more involved other people are in drafting, editing, evaluating and approving part or entire plans, the more ownership they will have. Technology plans are about change. An involved staff is more likely to approve of and try these changes, increasing the opportunities for success. Here are some general areas to consider:

- What is our single most important goal?
- What are desired student benefits and outcomes?
- What characterizes our learners?
- What is learning, according to our definition?
- What does learning look like while in progress?
- What is different about learning with technology?
- What roles do we desire and see for the future of technology and education in our institution and community?
- What will our classrooms of the future look like and include?
- How will instruction be delivered?
- How and at what levels will students achieve?
- How will the community be involved?
- What do we envision for our learners in the future?
- What must we do to make our vision come true?
- What must we do to develop, implement, and continually improve the quality of instruction and learning using technology?

Sample Vision Statement 1

We live in the Information Age. The Industrial Age is past. This age and the culture in which we live are increasingly being supported and changed by a wide variety of technologies. Technology itself is a rapidly developing and changing phenomenon.

_____ is responsible for preparing its students to be productive, contributing members of our society. This is done through effective, efficient, and meaningful instruction. This need mandates the effective use of appropriate technology, to give our students the best learning tools possible.

Our students will leave our schools to live and work in the 21st century. We are preparing them for a workplace and a homeplace that is technologically oriented, which will demand workers and parents who can use higher order thinking skills.

Jobs, and life in general, will require people who can solve problems, understand complex terminology, communicate clearly, make sense out of massive amounts of ever changing information and know how to use appropriate problem solving techniques. Life itself will demand higher levels of literacy in all areas of the curriculum, especially science and math.

It is no longer possible for teachers to know or teach everything a student needs to know to succeed in life. In all areas of the curriculum we must teach an information-based inquiry process which meets the demands of this new age. This is the new challenge for the world's most important profession.

To this end, we in _____ believe that technology exists as a very powerful, essential tool (among many) in the education process for both students and staff. Technology is not a separate curriculum, but an appropriate part of every curriculum at every level of instruction. "All technologies, at every level, explored by everyone" is a broad way to state the impact and importance of this fact of life.

Two key words dominate our concern for the use of technology; "appropriate" and "control." As a tool in the educational process, we as professional educators must continually ask what is appropriate for each curriculum and each level of instruction and how can we best control the use of this tool for maximum effectiveness of learning.

Technology will be most useful as we find the answers to these questions. Technology is no longer a maybe.

This plan is provided as a current guideline for the appropriate and effective use of technology in _____ . This plan will change as technologies develop.

Statement 2

Much of the teaching in the United States is still being conducted in the traditional turn-of-the-century mode: students remain passive learners while the teacher is the primary resource for imparting knowledge.

Realizing that today's current body of knowledge will double in approximately 800 days, one quickly understands that the traditional classroom model is no longer the effective delivery system. Teacher lectures, textbooks, workbooks, dittos - the traditional "teaching tools," cannot stay current with the knowledge explosion. The focal point of the instructional delivery process must change.

The half life of knowledge is a factor that necessitates the use of technological tools. If we want students to become active learners, we must allow them to carry out activities so they can construct their own knowledge.

Statement 3

In the past, educators have spent a great deal of time and energy generating Technology Use Plans. This, by its very name, implies that "a plan is needed to determine how to use technology." In fact we know that technology is a invaluable tool to support student learning. The various forms of technology can support core curriculum or any number of educational programs already in place at a school.

We really don't need a plan how to use technology, we need a plan to determine how technology will support the curriculum and programs at the school. This is a recommendation to abandon the technology use plan in favor of the Technologically Enriched Curriculum Plan (TEC Plan). This accurately characterizes the complete integration of technology in support of student learning, rather than the isolation of technology planning in a separate document. With this viewpoint, the focus is shifted from technology to curriculum with technology as a vehicle to help students learn

Statement 4

Educational progress in the future will require a greater use of technologies as tools to support the restructuring of teaching and learning. One of the basic objectives of Instructional Technology Education is to provide students equal access to a wider range of available material. Through the use of computer technology students can become decision makers while teachers will assume a more facilitative role.

As principal of _____ School I strongly support the goals and objectives outlined in the School Technology Education Plan. It is my expectation that through the implementation of this plan our students will have an even greater opportunity to reach their full potential.

Statement 5

Computers and related technology have had and will continue to have a profound impact upon modern civilization and education. Planned use of technology and its effect on society is of primary importance to the staff of _____ . All students of sufficient ability will be expected to become technologically literate and proficient in the ethical use of and application of computers in educational and vocational areas. The _____staff are role models and as such, must be prepared to include computers and related technology in all disciplines. The staff will be presented opportunities to acquire skills in computer use and integration into the curriculum. Additionally, students and staff will use technology to develop logical and critical thinking skills. The _____Technology Use Plan will be updated, coordinated, and evaluated by the Technology Use Planning Committee composed of school, community and business representatives.

Basic Principles and Ideals

The introduction of new interactive learning technologies into the curriculum presents us with significant challenges and opportunities. Not only can the computer and related tools help us to deliver instruction more effectively and productively, but it can also serve as an impetus for revitalizing what we teach. In developing and implementing a computer-based instructional program, we wish to recognize these principles:

The most pressing need for educators continues to be the teaching of the basic skills - reading, writing, mathematics, and problem solving. Without such skills, computer literacy is of limited value.

Aside from the basic equipment and software utilization skills, computer competencies need to be integrated into the existing curriculum.

Technology presents us with an opportunity to revitalize the existing curriculum, not merely automate it. The demands of the emerging information age require that traditional basic skills be augmented by emphasis on evaluation, synthesis, analysis, application, decision making and communication.

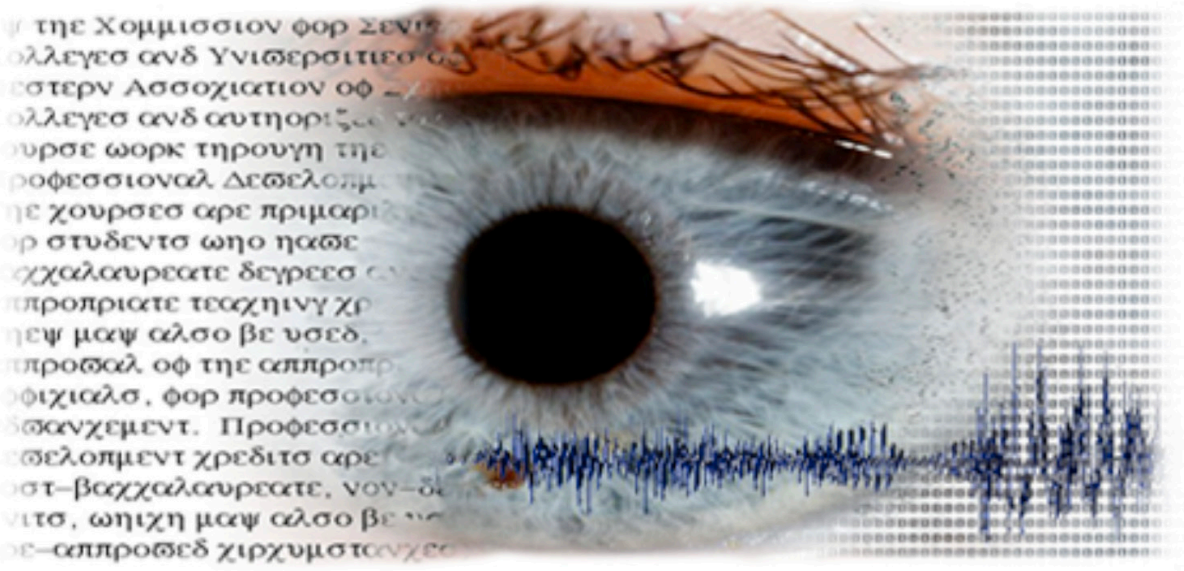
Students, in their further education and in their careers, will need to use the computer as a tool to locate and manipulate information. Therefore, the curriculum must give additional emphasis to procedural knowledge over factual knowledge.

Students will need to know how to make appropriate use of computer as a means for learning new skills and knowledge.

Your Vision Statement

Your Vision Statement sets the tone and relative importance for the entire Technology Use Plan. In the space below (or word - processed on separate pages) present the vision statement you (or you and your committee) drafted. Keep in mind who your target audience is - fellow teachers, administrators, parents, the community at large. This is often the public relations section - the heart and soul of your plan.

As part of your course download, you will find a 'TUP Vision Statement' form which can be opened in any word processor. The completed form / document can be uploaded at the end of the course using the 'portfolio submission' link on the course Moodle page.



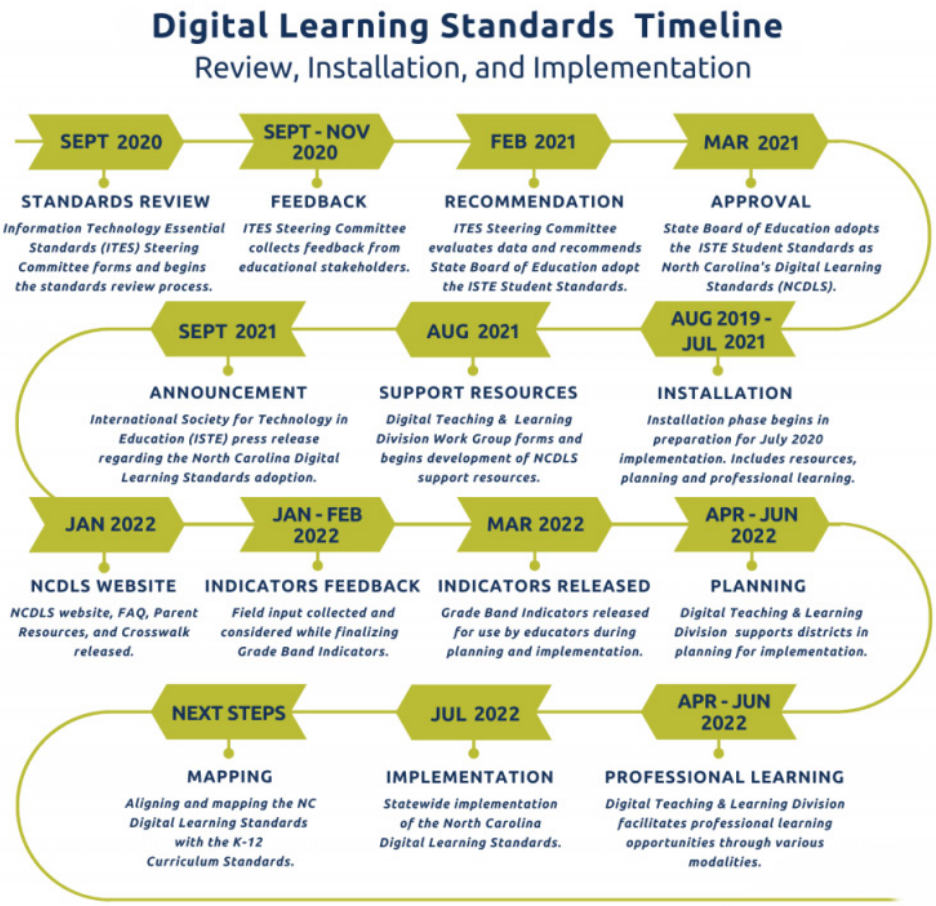
Timeline

In order for a plan to work, it must get done. To do this a timeline must be attached to the plan, indicating due dates. These dates are not set in cement, remember. But they are target dates, and important to include, if you are to keep the process moving in the right direction. Because of its scope and complexity, technology use plans must be phased in over a several month or several year period. Some schools do this in layers, first phasing in the infrastructure, then hardware, then software, then curricula.

Develop a timeline for the implementation of a technology use plan. Present it in the format of your choice - either using a narrative description or a graphic presentation. Naturally, this will be a "best guess" or "best case scenario" exercise, which is expected - just please try to be at least somewhat realistic in your estimates.

As part of your course download, you will find a 'TUP Timeline' form which can be opened in any word processor. I have also included a folder with some templates should you want to create a visual representation of your timeline.

The completed form / document can be uploaded at the end of the course using the 'portfolio submission' link on the course Moodle page.



The Rest . . .

The rest of the TUP is yours to finish, should you choose. Utilizing the resources contained within this workbook, combined with the experts, expertise, and other research at your disposal, you can draft a plan that is uniquely qualified to suit your needs

Information about technology can be extremely complex, and technology itself changes almost overnight. As a result, technology planning is particularly difficul for schools and often ends in gridlock, with decisions made prematurely from sheer frustration or anxiety.

Too often, planning is a single-year, one-shot process carried out under the pressures and constraints of time and budget. Too many design decisions which focus on where in the school to place machines, such as computers and projectors, or install servers and other hardware, are based on what is already known and proven, thus tending to support structures already in place (and already outmoded). It doesn't have to be that way.

Ultimately, we are not just developing a technology use plan, we are planning the future and success of our generations to come. Unless everyone works together toward a common vision and aligned goals, decisions about technology are nothing more than shots in the dark. And when our children are involved, we are playing with a loaded gun. So let's aim carefully, and make sure we hit the bullseye every time!

Post-course Teacher Survey 2

To fill out and submit this form, please go to the Post-course Survey link on the course website. (www.tup.steveyoungfpu.net). I have copied the survey here merely for reference. A copy of your completed form should be e-mailed to you after submitted. A couple brief, succinct sentences should suffice

Have your thoughts regarding the need for a TUP changed after this course? How so?

Were you able to enlist a committee to assist you? Briefly comment on your experience.

What is your perception of the motivation of your administration and colleagues to see well-planned technology integration across the curriculum? Could a TUP be influential

After completing this course, do you plan to continue on and develop a TUP? Explain.

Course Evaluation

To fill out and submit this form, please go to the Post-course Survey link on the course website. (www.tup.steveyoungfpu.net). I have copied the survey here for reference.

Did this course meet your expectations? Please briefly explain

How do you feel about the structure of the course? Was it organized in an orderly way, making it easy to follow? How would you improve the structure?

Have you any comments to offer about the assignments?

How did the workload of this course compare to that of other courses with equivalent units?

How did you hear about the course?

Did your materials arrive in a timely fashion and in good condition?

Would you recommend this course to others?

Appendix A

Sheridan County School Dist 1

DISTRICT TECHNOLOGY PLAN

VISION STATEMENT

Sheridan County School District #1 believes that information is today's key resource. The ability of all members of the community to access, understand, and communicate information will determine economic and social success in today's global society.

MISSION

Sheridan County School District is committed to a multi-year, efficient, and cost-effective plan for the use of technology in every learning environment. Information accessed through technology will be used to:

- Solve problems
- Foster Creativity
- Communicate with others
- Employ higher level thinking skills
- Facilitate self-directed, active learning

INTRODUCTION

Sheridan County School District 1 is embarking on an aggressive plan to address the challenging and diverse needs of students in the Twenty-first century. The effective use of technology is an integral component of this plan, and requires careful preparation. The district technology committee is outlining strategies to effectively implement technology that will improve student learning, and the support of student learning. Every school building has a representative involved on the committee in the development of this plan and a Community advisory team will be used for feedback/suggestions. This document is the result of many hours of discussion, learning and collaboration among a diverse representation of administrators, teachers, classified staff, parents and community members. The development of a strategic planning document for technology is challenging work. It requires commitment to a well-crafted planning process that will dramatically impact effective implementation.

- Technology planning is an on-going process.
- Broad-based involvement and support are essential for the plan’s success.
- The technology plan is needs driven, and based upon strong assessment criteria.
- The design of the planning process provides leadership, direction, defines common values and priorities, and builds capacity in planning teams.
- An on-going assessment process is built-in.

EXECUTIVE SUMMARY

The purpose of the Sheridan County School District Technology Plan is to provide a coherent long range direction for the district as it envisions how technology can enhance the teaching and learning process. The District Technology Committee, formed in 1994, was charged with the task of developing the plan. The process has included staff surveys, equipment inventories, examination of school planning documents from across the country, visioning and problem-solving activities, and the staff development of team members. In this plan are the findings and recommendations of the committee based upon data collected and the best thinking of the team. The team recognizes that planning for the future is an on-going process, and is committed to sustaining the technology facility planning efforts so that the plan is updated annually. For the purposes of this document the technology plan is defined as all of the components required to successfully implement instructional and administrative technologies in the district. This includes equipment, software, installation, training, and support.

Our Vision is to provide an Education for all Learners. This education will provide students with the skills, knowledge, and attitudes outlined in the District Outcomes that students who achieve the outcome goals will have the ability to:

- Be lifelong learners
- Be communicators
- Be complex thinkers
- Be good workers
- Be social interactors
- Be positive people

Today technology plays a significant role in attaining these goals and technology literacy, for both students and staff, is essential. Technology literacy provides our students with access to an ever-changing world dependent on information. In order to participate in our technological age effectively, our students must be information navigators, critical thinkers and analyzers, creators of knowledge, and communicators using a variety of technologies. Integrating technological instruction throughout the curriculum provides the essential skills necessary to meet world standards.

Summary of Findings:

Sheridan School District #1 has been progressive in technology over the past few years. The district does, however, face significant challenges in order to meet the goals as described in the vision. The following generalizations represent the data collected during the planning process.

- The amount of computer equipment available in the school district is adequate by most national standards. The capacity of the equipment, how ever, is somewhat limited. Improvements have been made over the past year, but must continue.

- Computer technologies have been more fully implemented than voice and video.

- Staff and community support the implementation of technology and believe that its use enhances student learning.

- Technology implementation is currently limited in scope and many staff do not have the skills to adequately deploy new technologies.

- Training, through any means, is highly needed for all employee groups.

- Technology implementation into the curriculum, and student skills to take advantage of available technologies need improvement.

- Opinions about technology are very diverse especially regarding deployment models.

Summary of Recommendations:

The benefits of technology implementation provide unlimited possibilities. These implementations however, are costly and complex and must provide a measurable benefit for students, staff, and the community. The following recommendations provide a comprehensive look at the SCSD #1 technology facilities, and include issues regarding infrastructure, staff development, support, and information resources. After thoughtful consideration, the following recommendations reflect the highest priorities for Sheridan County School District #1 and should remain central to the technology efforts of the district.

Infrastructure

- Increase district computer capacity by placing all equipment on a 5-year upgrade cycle.

- Upgrade the district network to provide high-speed access for data

- Provide universal access to information for students, staff, and community

Information Resources

- Provide standard productivity software for all district computers, with oppor tunities for specialized software purchases that align with job function and/ or curricular area.

- Provide access to effective and appropriate electronic learning resources (web, library, etc.)

- Continue to provide effective information resources for staff including student information, and systems to collect/analyze/report data on programs, curriculum, students, and other internal systems (fiscal, human resources, etc.)

- Develop accountability systems for students and staff

Staff Development

- Enforce implementation of technology skill standards (competencies) for students and staff.

- Develop systems for assessing those competencies.
- Increase staff development opportunities for district staff through a variety of options

- Implement training which focuses upon the integration of technology into the student-centered classroom

- Provide opportunities for parents and community members to receive technology training

Support

- Continue to develop a comprehensive strategy for district technologies with appropriate escalation and priority processing for repairs and software support.

- Provide sufficient technical sta f as recommended by the State Department of Education.

Commitments

The success of this plan is dependent upon the support of the Sheridan County School District #1 Board and Administration. The Board and Administration must be committed to securing resources for the implementation of this plan.

Site administrators should commit to supporting the implementation of the district technology plan by the following:

- Working with site faculty and staff building an understanding of technology impact upon teaching and learning, and the implications of the district technology plan.

- Concentrating site resources to move the district technology plan forward at the site level.

- Utilize staff development resources and inservice days for implementation of the district technology plan.

- Building technology competencies into staff expectations and hiring criteria.

Sheridan County School District staff and faculty should commit to actively engaging in activities, which will enhance their ability to fully integrate technology into the teaching and learning process, and the management of that process.

GOALS AND OBJECTIVES

Goal 1: Partnerships

Sheridan County School District will foster on-going collaboration with broad participation by various educational entities, governmental agencies and community and business partners.

Consortium Community Members Past and Present include

Don Steadman, President	Ranchester State Bank
Art Badget, Former Mayor	Dayton
Brad Lanka, Owner	Construction Company
Tanya Yelton, Director	Kids Care Preschool
Carole Weisz, Director	Child's Place
Roy Garber, Owner	Garber Feed Lot
Bruce Burns, State Legislator	Sheridan County
Susan Hiller, Nurse	Ranchester
Michelle Nielsen, Instructor	Sheridan College
Marsha Arzy, Instructor	Casper College
Walt Gray, Community	Dayton

Objective 1: Continuation of Community Access to District Technology

The district's commitment to community involvement includes opening lab sites so that community members, students, and parents can utilize the hardware and software that are available at the school sites.

Objective 2: Continuation of Involvement in Northeast Wyoming Regional Training Center

The regional training center will provide training opportunities for teachers and technologists.

Objective 3: Foster ongoing collaboration in both planning and implementation

Our partners assure that we are addressing vision and planning, professional development, policies, resources, and creating a community of learners.

Goal 2: Professional Development

It is our goal to ensure that staff members effectively use available technological tools, to seek, organize and communicate information.

Objective 1: Sheridan School Dist #1 will continue staff development in technology for

all staff members and with continual evaluation and redesign will continue to update opportunities for all.

Professional Development Programs

The key to implementing effective use of technology is Staff Development. The primary purpose of Staff Development is that it helps build awareness among staff of the possibilities, capabilities, and advantages of using technology in the school setting. To be effective, Staff Development activities must be designed to take all staff, including administrators, teachers, and support staff, from their present level of knowledge to the required level of competence. Therefore, we recommend avoidance of the usual "one-shot training" in favor of more long-term training that centers on the relationship between technology and the teacher's role. We feel the following programs are needed to properly train the District's staff. At least 30% of the annual budget will be dedicated to Staff Development.

- Establish a Technology Mentor Program

- Establish the position of Teacher on Special Assignment (TSA) at each site by giving release time to Building Coordinator's for this project.

- Conduct mini-sessions at training centers in school sites and at the District Training Facility.

- Technology In-services - Incentives

Technology Mentor Program

The Technology mentor program should be developed to identify teachers with advanced technology integration skills and pair them up with other teachers to help show these teachers ways that technology can be successfully into the curriculum. Teachers who would be good models should be provided with the necessary time, support, and equipment to properly mentor their assigned colleagues. Additionally all district mentorships should include a technology component.

Teacher on Special Assignment

The Teacher on Special Assignment position provides invaluable support to the District assisting the staff in using technology. The TSA's duties should include monitoring the success of teachers and creating peer groups. As the technology level of each site increases, consideration should be given to adding this as a half-time position.

Some of the duties of the District TSA are:

- Works in conjunction with District Technology Office and Schools to o fer educational instructional support to all staff.

- Provides leadership and coordination with curriculum, technology, and instructional resources.

- Assists with staff development workshops and other training.

- Models and coaches teachers with the integration of current technology.

Mini-sessions

Mini-sessions are short classes taught after school, fridays or on weekends. They are scheduled in small groups of 6-10 to provide comprehensive, hands-on, and personalized training. The training center currently offers a number of mini-session style courses. These offerings should be expanded with consideration given to offering more of these functions on-site.

In-service/Workshops

District will provide focused, extensive, consistent, and ongoing training with a focus on modeling sound instructional practices where subject area content is supported by technology resources. These workshops will be structured to link learning activities to content and technology standards. Special technology in-services can be developed in order to cover some of the broader technology issues. These may cover use of the network and trouble-shooting issues, or the use of the Internet in the classroom. The District will set aside a whole staff development day for technology training.

Train the Trainer

The District's resources for technology training will always be limited. Therefore training one teacher and then having them train others within the school will always be an effective way to ensure that the needed technological knowledge spreads throughout the District.

Incentives

In-district credit (15 hours = 1 unit) will be provided for after school on-site and district training. Other incentives such as priority for new classroom equipment or software should be considered. Some of the training sessions will also provide Graduate Credit or Continuing Education Credit.

Other Staff Development Issues

The hardware and the software need to be present in the classroom for follow-up hands-on use to supplement training and further teacher knowledge and ongoing skill enhancement.

Goal 3: Curriculum Integration

Technology becomes an integral part of the teaching and learning process as teachers have a smooth integration of technology into their curriculum.

OBJECTIVES - STILL NEED

PROJECTS - STILL NEED

Goal 4: Infrastructure

The District will support the infrastructure, routing, computer, telecommunications equipment and software necessary to meet or exceed the technology application standards of the District.

Objective 1: Sheridan County School Dist #1 will provide and support the infrastructure by updating network equipment, computers, and software to enhance the learning environment.

Projects:

Technical Support

With the amount of new technology in the District, the implementation of a technology support services plan for the District is critical. Working directly with the Tech department, the committee has identified the following technical support options to meet these needs.

District Help Desk

The District Tech Department will support the District's WAN and school sites' LAN. The tech department is establishing a Help Desk to provide answers to technical questions and assist in the resolution of hardware, software, and networking issues. The Help Desk will be the first point of contact for building coordinators who are experiencing technical difficulties. The Help Desk will provide a timely response to schools' technology needs and concerns. In order to do this, the Tech Department staff needs to be large enough to support the increased integration of emerging technologies. Help desk software will provide the District with patterns, trends, and statistical information that provide an analysis of the performance of the District WAN and site LANs.

Student Involvement

The District will explore and implement a program to involve students in the technology support process. The program (like Cisco Academy Students) would provide students with the knowledge and experience required to troubleshoot computer systems and to develop technological skills. Students enrolled in the class are receiving instruction on various aspects of technological support for networked systems. Selected students will provide both training and support to peers and staff.

Student Technology Interns

The idea of Student Technology Interns focuses on the largely untapped resource of student enthusiasm, interest, and skill with technology in order to provide the level of additional support required encouraging and enabling teachers to successfully bring technology into the classroom.

Enrolled students in Generation Y receive instruction on various aspects of technical support for systems installed in their schools. They then work in collaboration with building staff. In addition to normal technical support duties the Generation Y Students are used to teach the use of various technologies, such as e-mail and Internet, throughout the Building. Teachers have been very willing to learn from Generation Y students.

This program is very much a win-win situation as the school is able to increase its tech support abilities with little additional budget, and the students receive high demand skills that are immediately transferable to the marketplace.

Objective 2: Develop and research distance learning opportunities.

Need Projects

Goal 5: Evaluation

Sheridan County School District #1 is committed to establishing formative and summative evaluations of educational technology utilized within the district.

ASSESSMENT

One important component of the Technology Plan is the development of benchmarks. Benchmarks are points of reference against which future assessments may be compared.

Examples of benchmarks include student learning outcomes, staff competencies, and resource availability. Benchmarking assists organizations in comparing their practices in a systematic way to standards of excellence.

A plan such as this one, which asks for a significant commitment of District resources, should consider ways to measure outcomes. A key criterion for the defini ion of benchmarks is that they must embrace a philosophical basis for decision making, while serving as instruments to measure progress. Three comprehensive surveys will be conducted during each planning cycle to determine the District's technology status.

The primary purpose of the Self-Evaluation for Teacher/Staff Use of Technology Survey is to determine how technological resources are used as well as the level of skill in the District. Teachers, administrators, and classified staff (representing the various schools in the District) will complete this survey during each planning cycle. Teachers and aides will indicate their competency levels in various areas' allowing us to make a needs assessment for training. This same survey is repeated to see if the training we are providing is making a difference.

A representative from each school completes the QED and Milken Survey's that we prepare for the State. These surveys seek a quantitative analysis of technology resources (for example, computers, printers, file servers, TVs, scanners, digital camera's, etc) at each site. These surveys gather information on skills, training, planning, and technical support. We use this information for internal review also.

Assessment of Progress Toward Goals

The surveys and resulting benchmarks identify which technologies currently exist and how they are used in the District. As the technology plan is implemented, these benchmarks can be used to evaluate progress and determine needs as they evolve.

These benchmarks are not evaluative in nature, but rather informative in order to provide data to decision-makers. Clearly, disparities in technology implementation exist in the schools as within every organization. The root of these disparities is complex; however, several themes commonly contribute to technology disparities. These themes include leadership, staffing, resource opportunities (grants, administrative decisions, etc.), and a history of limited budgets for technology.

The establishment of benchmarks and their subsequent publication encourages site-based self-assessments that are essential for constructive change. Based on the responses, the sites can identify opportunities to improve both the technology resource availability and the way the District uses these resources.

The purpose of these benchmarks is to link technology resources to their use in every learning environment. In this way, the existing level of support for students, teachers, and classified employees can be determined. The premise is founded on the theory that both resource availability and behavioral changes are required to improve educational outcomes.

It is not sufficient to simply acquire technology with the hope it will be used as an essen-

tial part of a student's learning environment. This benchmarking process will enable the District to assess its progress toward technological maturity over time. Improvements in the Technology Plan

Technology plans should grow and improve over time, just as technology resources and behaviors within the District should. In order to track the progress of the technology planning process, each iteration of the Technology Plan will be evaluated using the Technology Plan Rubric included in State of Wyoming planning documents.

Recommendations for Implementation of Plan

As part of the technology planning process a needs assessment was conducted to determine issues that should be addressed by this technology plan. After analyzing and discussing these results, the Technology Committee feels that the following are the most important technology issues facing the District.

Instructional technology should be an integral part of curriculum and a tool for assisted learning for all students.

All students and staff should have equal access to technology. Computer hardware, software, peripherals, audio/visual equipment and other supplies need to be conveniently available throughout the District.

Technological literacy must be viewed as a fundamental skill for students: all students should be technologically proficient upon graduation from high school

All staff, including teachers, administrators, and support personnel, must be technologically literate: a focused and on-going staff development program should be implemented to ensure that staff members are trained to use technology proficiently and productively. A minimum of 30% of annual technology budget would be allocated for staff development.

The hardware and software in the District should be continually upgraded to meet the curriculum integration needs. A replacement policy should be put into effect to replace or upgrade 20% of equipment per year so that all equipment is replaced on a 5-year schedule. This would require aggressive funding with a minimum of 30% of the annual technology budget dedicated to these needs.

Evaluation of technology's impact on students' learning and staff productivity should be an on-going process.

Educational technology has been shown to help "special needs" student populations in many educational ways. By integrating technology into teachers' instructional strategies, "special needs" students are likely to become more self-motivated about learning, exhibit more responsible and mature behavior and continue their educational career.

An appropriate number of expert technicians should be consistently available.

District staffing in the Technology Department needs to be reviewed as additional technology is added into the District.

Professional technology training must be kept current.

Technology Concerns

The technology committee feels that the following problems are obstacles to the success

of our district technology plan.

Staff development in the instructional use of technology is not sufficient

The funding sources need to be consistent with implementing the Technology Use Plan.

The number of qualified technicians does not adequately meet the needs of the District. The recommendation of the State is one FTE per 100 computers.

Policy Issues

The Technology Committee

The role of the Technology Committee for District 1 is to guide the implementation of the District's Technology Use Plan.

The committee will meet on a regular basis to:

- Equally and completely represent the District's various groups.

- Share information from individual school sites

- Evaluate progress towards the goals of the plan.

- Make recommendations concerning hardware, software and staff development.

- Conduct a complete review of the District Technology Use Plan every year.

- Publish information in all available mediums to all stakeholders.

- Formally present progress in educational technology to the school board.

Each school site, under the leadership of building coordinators, will be responsible for:

- Assisting in developing and implementing the district plan

- Fostering enthusiasm and the use of technology at school sites

- Troubleshooting and assisting teachers with hardware and software

Acceptable Use Policy

The Sheridan County School District has developed a comprehensive policy to establish acceptable use of the District's computers in regards to the District's networks and the larger Internet. The School District must take precautions to restrict access to controversial materials. However, on a global network it is impossible to control all content.

The committee believes that the valuable information and interaction available from the network and Internet access far outweighs the possibility that the users may procure material that is not consistent with the educational goals of the District.

Because the District cannot screen all material on the network, network users must agree to abide by the rules laid out in the Internet Terms and Conditions Agreement, prior to receiving an account with the District.

Appendix B

Systems and Standards: Hardware

At some point, a decision must be made as to what kind of hardware will be used in your school. Will any existing equipment be kept? Can it be upgraded or put to different uses? Will new hardware be purchased? In the case of computers, should they run Microsoft Windows or Apple Macintosh?

Students easily adapt and move from one platform to another rather seamlesly. Students do get very upset when the platform they are given is incapable of doing some of the things they learn that another machine can do or do with less effort. But for the most part, kids adapt. So it is the adults who seem to have so much invested in the platform war.

The platform controversy often goes to extremes in school districts as allegiances are strong and bias is at times an insurmountable obstacle as it is in any holy war. People's emotional attachments to the platform they learned on often make it nearly impossible to be objective. This battle has left most educators, administrators, and board members at an extreme disadvantage in that they do not have an educational technology background and have had to rely on their technical computer support staff and others for information and recommendations.

The recommendations and information they have gotten has often been biased by the platform bias of their techies. In the past educators, administrators, and boards may have been uncomfortable with this situation, but left it up to the techies. That situation has changed! The importance of the platform decision has become much more critical in the last two years, however, as the world and school technology programs are changing at breakneck speed.

The national bad press that Apple has received has also increased administrator and board member anxiety over the platform issue. Macintosh is the major multimedia platform in education today, according to a report by Quality Educational Data. The bad press has prompted some school administrators I know to ask themselves the question whether they should purchase fewer Macintoshes. Board members and administrators are also at a disadvantage in making that decision because they often lack, or are not given, factual information upon which to base that decision.

This lack of technical support, especially at the building level, has been identified as the number one problem in equational computing. Just buying technology has proven to be a major challenge for most districts and getting enough technical support positions seems completely off the horizon. The ease of installing and maintaining a platform becomes a real concern when technical resources are at such a premium.

Computers that sit unused in dark closets or on desktops are a sign of failure of the school's educational technology program. Another factor that parents in particular express at school PTO meetings is, "Shouldn't we have the same computers in the classroom that are the majority in business?" This is also especially enticing for school administrators and board members who are much more in tune with business and business management practices. But there are some key differences between business and education, especially in regards to computing.

A major difference is that studies show that business provides a support ratio of one computer support person for every 35-60 users. In our district the ratio is closer to one technical support person for every 750 users. Given how difficult it is to get money just for computers, hiring an army of techies to support them will not fly with tax-payers and parents. Business' computer support model would be nice for education, but it just won't happen.

All this uncertainty has left many educators very nervous about computing in general. It is all moving so fast and any decision you make could become a mistake. However, the best advise for how to make decisions in today's very uncertain world might be to go with adult reasons for making decisions: Which platform that exists right now saves the most money, time, and effort, and simultaneously, delivers the most features that educators and students need at the best price?

It is helpful to set minimum standards for hardware; this provides a guide for purchasing and establishing a level of certainty that a given computer will be able to run a software title. Currently, a computer generation is about 36 months. As we know, the computers a school purchases will likely be in use 5 to 10 years from now. Choosing a 'new' generation of computer (as opposed to a model about to be discontinued or build with older hardware) will prolong its usesful life as long as possible.

Adapted from:
http://h-net.msu.edu/cgi-bin/logbrowse.pl?trx=vx&list=H-Mac&month=9703&week=c&msg=EGru3HJGfdV9Ik0GZQfv6Q&user=&pw=

Windows OS
- Pentium IV processor > 2ghz
- 8gb RAM
- 500 gigabyte hard drive
- SVGA 1024 x 768 color
- 100mb Ethernet support
- Wireless networking

Macintosh OSX
- Intel processor > 2ghz
- 8gb RAM
- 256 gigabyte hard drive
- 100mb Ethernet support
- Wireless networking

iPad Tablet
- iPad 2 or newer
- 16gb RAM
- Wireless networking

Chromebook
- 4gb RAM
- 8 hour battery life
- Wireless networking

In addition to individual computers, schools wire computers together to form networks. This allows for the sharing or resources (such as printers and hard drives) and information. E-mail capability and internet access is virtually manditory. This of course adds several layers of complexity to a computer system. Below are current standards for a typical building level network. Expert advice is usually needed in this area. Talk to several schools that have already have a technology infrastructure in place.

Server requirements:

Windows or Macintosh
TCP/IP network protocol
gigabit ethernet
8gb RAM
1 terabyte hard drive
backup system (onsite or cloud)
uninterupped power supply (UPS)

Network Hubs:

18 100 base - T ports
1 AUI port
SNMP management
automatic port segmentation
self test for fault isolation
wall or rack mountable

Fiber Optic Transevers:

2 port AUI
ST fiber connector
100 base - FL standard

WiFi Infrastructure

802.11 b/g/n compliant (WiFi)
Utilizes WPA2 with AES encryption
Network should be configured to provide 100% network connectivit
The DHCP server must be able to support the required number of devices. (At least one enterprise level Access Point/Router per 50 nWiFi devices)
802.11n compliant access points required.

Networking Jargon Glossaries:

http://compnetworking.about.com/od/basicnetworkingconcepts/l/blglossary.htm

http://www.aaxnet.com/info/glonet.html

https://www.broadbandgenie.co.uk/broadband/help/broadband-glossary-technical-terms-explained

Appendix C

Internet Acceptable Use Agreement (courtesy of Rochester School Department, Rochester, New Hampshire)

The [Name of Organization] recognizes the value of computer and other electronic resources to improve student learning and enhance the administration and operation of its schools. To this end, the [Governing Body Name] encourages the responsible use of computers; computer networks, including the Internet; and other electronic resources in support of the mission and goals of the [Name of Organization] and its schools.

Because the Internet is an unregulated, worldwide vehicle for communication, information available to staff and students is impossible to control. Therefore, the [Governing Body Name] adopts this policy governing the voluntary use of electronic resources and the Internet in order to provide guidance to individuals and groups obtaining access to these resources on [Name of Organization]-owned equipment or through [Name of Organization]-affiliated organizations

[Name of Organization] Rights and Responsibilities

It is the policy of the [Name of Organization] to maintain an environment that promotes ethical and responsible conduct in all online network activities by staff and students. It shall be a violation of this policy for any employee, student, or other individual to engage in any activity that does not conform to the established purpose and general rules and policies of the network. Within this general policy, the [Name of Organization] recognizes its legal and ethical obligation to protect the well-being of students in its charge. To this end, the [Name of Organization] retains the following rights and recognizes the following obligations:

1. To log network use and to monitor fileserver space utilization by users, and assume no responsibility or liability for files deleted due to violation of fileserver space allotments.
2. To remove a user account on the network.
3. To monitor the use of online activities. This may include real-time monitoring of network activity and/or maintaining a log of Internet activity for later review.
4. To provide internal and external controls as appropriate and feasible. Such controls shall include the right to determine who will have access to [Name of Organization] owned equipment and, specificall , to exclude those who do not abide by the [Name of Organization]'s acceptable use policy or other policies governing the use of school facilities, equipment, and materials. [Name of Organization] reserves the right to restrict online destinations through software or other means.
5. To provide guidelines and make reasonable efforts to train staff and students in acceptable use and policies governing online communications.

Staff Responsibilities

1. Staff members who supervise students, control electronic equipment, or otherwise have occasion to observe student use of said equipment online shall make reasonable efforts to monitor the use of this equipment to assure that it conforms to the mission and goals of the [Name of Organization].

2. Staff should make reasonable efforts to become familiar with the Internet and its use so that effective monitoring, instruction, and assistance may be achieved.

User Responsibilities

1. Use of the electronic media provided by the [Name of Organization] is a privilege that offers a wealth of information and resources for research. Where it is available, this resource is offered to staff, students, and other patrons at no cost. In order to maintain the privilege, users agree to learn and comply with all of the provisions of this policy.

Acceptable Use

1. All use of the Internet must be in support of educational and research objectives consistent with the mission and objectives of the [Name of Organization].
2. Proper codes of conduct in electronic communication must be used. In news groups, giving out personal information is inappropriate. When using e-mail, extreme caution must always be taken in revealing any information of a personal nature.
3. Network accounts are to be used only by the authorized owner of the account for the authorized purpose.
4. All communications and information accessible via the network should be assumed to be private property.
5. Subscriptions to mailing lists and bulletin boards must be reported to the system administrator. Prior approval for such subscriptions is required for students and staff.
6. Mailing list subscriptions will be monitored and maintained, and files will be deleted from the personal mail directories to avoid excessive use of fileserver hard-disk space.
7. Exhibit exemplary behavior on the network as a representative of your school and community. Be polite!
8. From time to time, the [Name of Organization] will make determinations on whether specific uses of the network are consistent with the acceptable use practice

Unacceptable Use

1. Giving out personal information about another person, including home address and phone number, is strictly prohibited.
2. Any use of the network for commercial or for-profit purposes is prohibited
3. Excessive network use for personal business shall be cause for disciplinary action.
4. Any use of the network for product advertisement or political lobbying is prohibited.
5. Users shall not intentionally seek information on, obtain copies of, or modify files, other data, or passwords belonging to other users, or misrepresent other users on the network.
6. No use of the network shall serve to disrupt the use of the network by others. Hardware and/or software shall not be destroyed, modified, or abused in any wa .
7. Malicious use of the network to develop programs that harass other users or infiltrate a computer or computing system and/or damage the software components of a computer or computing system is prohibited.
8. Hate mail, chain letters, harassment, discriminatory remarks, and other antisocial behaviors are prohibited on the network.

9. The unauthorized installation of any software, including shareware and freeware, for use on [Name of Organization] computers is prohibited.
10. Use of the network to access or process pornographic material, inappropriate text files (as determined by the system administrator or building administrator), or files dangerous to the integrity of the local area network is prohibited.
11. The [Name of Organization] network may not be used for downloading entertainment software or other files not related to the mission and objectives of the [Name of Organization] for transfer to a user's home computer, personal computer, or other media. This prohibition pertains to freeware, shareware, copyrighted commercial and non-commercial software, and all other forms of software and files not directly related to the instructional and administrative purposes of the [Name of Organization].
12. Downloading, copying, otherwise duplicating, and/or distributing copyrighted materials without the specific written permission of the copyright owner is prohibited, except that duplication and/or distribution of materials for educational purposes is permitted when such duplication and/or distribution would fall within the Fair Use Doctrine of the United States Copyright Law (Title 17, USC).
13. Use of the network for any unlawful purpose is prohibited.
14. Use of profanity, obscenity, racist terms, or other language that may be offensive to another user is prohibited.
15. Playing games is prohibited unless specifically authorized by a teacher for instructional purposes.
16. Establishing network or Internet connections to live communications, including voice and/or video (relay chat), is prohibited unless specifically authorized by the system administrator.

Disclaimer

1. The [Name of Organization] cannot be held accountable for the information that is retrieved via the network.
2. Pursuant to the Electronic Communications Privacy Act of 1986 (18 USC 2510 et seq.), notice is hereby given that there are no facilities provided by this system for sending or receiving private or confidential electronic communications. System administrators have access to all mail and will monitor messages. Messages relating to or in support of illegal activities will be reported to the appropriate authorities.
3. The [Name of Organization] will not be responsible for any damages you may suffer, including loss of data resulting from delays, non-deliveries, or service interruptions caused by our own negligence or your errors or omissions. Use of any information obtained is at your own risk.
4. The [Education Agency Name] makes no warranties (expressed or implied) with respect to:
   * the content of any advice or information received by a user, or any costs or charges incurred as a result of seeing or accepting any information; and
   * any costs, liability, or damages caused by the way the user chooses to use his or her access to the network.
5. The [Name of Organization] reserves the right to change its policies and rules at any time.

User Agreement

(to be signed by all adult users and student users above grade 5)

I have read, understand, and will abide by the above Acceptable Use Policy when using computers and other electronic resources owned, leased, or operated by the [Name of Organization]. I further understand that any violation of the regulations above is unethical and may constitute a criminal offense. Should I commit any violation, my access privileges may be revoked, school disciplinary action may be taken, and/or appropriate legal action may be initiated.

_____
User Name (please print)

_____
User Signature Date

Parent Agreement (to be signed by parents of all student users under the age of eighteen)

As parent or guardian of [please print name of student] _____, I have read the Acceptable Use Policy. I understand that this access is designed for educational purposes. [Name of Organization] has taken reasonable steps to control access to the Internet, but cannot guarantee that all controversial information will be inaccessible to student users. I agree that I will not hold the [Name of Organization] responsible for materials acquired on the network. Further, I accept full responsibility for supervision if and when my child's use is not in a school setting. I hereby give permission for my child to use network resources, including the Internet, that are available through [Name of Organization].

_____
Parent Name (please print)

_____
Parent Signature Date

Sample Electronic Mail Policy

(courtesy of the Rhode Island Department of Education)

User Responsibilities

These guidelines are intended to help you make the best use of the electronic mail facilities at your disposal. You should understand the following:

1. The agency provides electronic mail to staff members to enable them to communicate effectively and efficiently with other members of staff, other companies, and partner organizations.
2. When using the agency's electronic mail facilities you should comply with the following guidelines.
3. If you are in any doubt about an issue affecting the use of electronic mail, you should consult the IT Services Manager.
4. Any breach of the agency's Electronic Mail Policy may lead to disciplinary action.

DO:

1. Do check your electronic mail daily to see if you have any messages.
2. Do include a meaningful subject line in your message.
3. Do check the address line before sending a message and confirm you are sending it to the right person.
4. Do delete electronic mail messages when they are no longer required.
5. Do respect the legal protections to data and software provided by copyrights and licenses.
6. Do take care not to express views that could be regarded as defamatory or libelous.
7. Do use an "out of the office assistant" to automatically reply to messages when you are not available.

DO NOT:

1. Do not print electronic mail messages unless absolutely necessary.
2. Do not expect an immediate reply; recipients might not be at their computer or could be too busy to reply straight away.
3. Do not forward electronic mail messages sent to you personally to others, particularly newsgroups or mailing lists, without the permission of the originator.
4. Do not use electronic mail for personal reasons.
5. Do not send excessively large electronic mail messages or attachments.
6. Do not send unnecessary messages such as festive greetings or other non-work items by electronic mail, particularly to multiple people.
7. Do not participate in chain or pyramid messages or similar schemes.
8. Do not represent yourself as another person.
9. Do not use electronic mail to send or forward material that could be construed as confidential, political, obscene, threatening, o fensive, or libelous.

Please note the following:

1. All electronic mail activity is monitored and logged.
2. All electronic mail coming into or leaving the organization is scanned for viruses.
3. All the content of electronic mail is scanned for offensive material.

Sample Password Policy

1. Overview

Passwords are an important aspect of computer security. They are the front line of protection for user accounts. A poorly chosen password may result in the compromise of [Name of Organization]'s entire network. As such, all employees (including contractors and vendors with access to [Name of Organization] systems) are responsible for taking the appropriate steps, as outlined below, to select and secure their passwords.

2. Purpose

The purpose of this policy is to establish a standard for the creation of strong passwords, the protection of those passwords, and the frequency of change.

3. Scope

The scope of this policy includes all personnel who have or are responsible for an account (or any form of access that supports or requires a password) on any system that resides at any [Name of Organization] facility, has access to the [Name of Organization] network, or stores any non-public [Name of Organization] information.

4. Policy

1. All system-level passwords (e.g., root, enable, NT admin, application administration accounts, etc.) must be changed on at least a quarterly basis.
2. All user-level passwords (e.g., e-mail, web, desktop computer, etc.) must be changed at least every six months. The recommended change interval is every four months.
3. Each successive password must be unique. Re-use of the same password will not be allowed.
4. Passwords must be a minimum of eight (8) characters long.
5. User accounts that have system-level privileges granted through group memberships or programs such as "sudo" must have a unique password from all other accounts held by that user.
6. Passwords must not be inserted into e-mail messages or other forms of electronic communication.
7. Where Simple Network Management Protocol (SNMP) is used, the community strings must be defined as something other than the standard defaults of "public," "private," and "system," and must be different from the passwords used to log in interactively. A keyed hash must be used where available (e.g., SNMPv2).

8. All user-level and system-level passwords must conform to the guidelines described below.
9. Passwords should never be written down or stored online.

4.1 Password Construction Guidelines

Passwords are used for various purposes at the [Name of Organization]. Some of the more common uses include: user-level accounts, web accounts, e-mail accounts, screen saver protection, voice-mail password, and local router logins. Since very few systems have support for one-time tokens (i.e., dynamic passwords which are only used once), everyone should be aware of how to select strong passwords.

1. Poor (unacceptable) passwords have the following characteristics:
    1. The password contains fewer than eight characters.
    2. The password is a word found in a dictionary (English or foreign).
    3. The password is a common usage word such as:
    * names of family, pets, friends, co-workers, fantasy characters, etc.
    * computer terms and names, commands, sites, companies, hardware, software
    * acronyms for the agency or city
    * birthdays and other personal information such as addresses and phone numbers
    * word or number patterns like aaabbb, qwerty, zyxwvuts, 123321, etc.
    * any of the above spelled backwards
    * any of the above preceded or followed by a digit (e.g., secret1, 1secret)
2. Strong (acceptable) passwords have the following characteristics:
    1. Contain both upper and lowercase characters (e.g., a?z and A?Z).
    2. Have digits and punctuation characters as well as letters (e.g., 0?9 and !@#$%^&*()_+|~-=\`{}[]:";í<>?,./).
    3. Are at least eight alphanumeric characters long.
    4. Are not a word in any language, slang, dialect, jargon, etc.
    5. Are not based on personal information, names of family, etc.
    6. Can be easily remembered. One way to do this is create a password based on a song title, affirmation, or other phrase. For example, the phrase might be: "This May Be One Way To Remember" and the password could be: "TmB1w2R!" or "Tmb1W>r~" or some other variation. (NOTE: Do not use either of these examples as passwords!)

4.2 Password Protection Standards

1. Do not use the same password for [Name of Organization] accounts as for other non-[Name of Organization] access (e.g., personal ISP account, option trading, benefits, etc.). Where possible, don't use the same password for the various [Name of Organization] access needs. For example, select one password for the e-mail systems and a separate password for network systems. Also, select a separate password to be used for an NT account and a UNIX account.

2. Do not share agency passwords with anyone, including administrative assistants or secretaries. All passwords are to be treated as sensitive, confidential [Name of Organization] information.
3. If someone demands a password, refer them to this document or have them call someone in the Office of Network and Information Systems
4. Do not use the "Remember Password" feature of applications (e.g., Eudora, Outlook, Netscape Messenger).
5. Do not write passwords down and store them anywhere in your office. Do not store passwords in a file on ANY computer system (including iPads or similar devices) without encryption.
6. Change passwords at least once every six months (except system-level passwords which must be changed quarterly). The recommended change interval is every four months.
7. If an account or password is suspected to have been compromised, report the incident to the Office of Network and Information Systems and change all passwords
8. The Office of Network and Information Systems or its delegates may perform password cracking or guessing on a periodic or random basis. If a password is guessed or cracked during one of these scans, the user will be required to change it.

4.3 Application Password Development Standards

Application developers must ensure their programs contain the following security precautions:

1. Applications should support authentication of individual users, not groups.
2. Applications should not store passwords in clear text or in any easily reversible form.
3. Applications should provide for some sort of role management, such that one user can take over the functions of another without having to know the other's password.
4. Applications should support TACACS+, RADIUS, and/or X.509 with LDAP security retrieval, wherever possible.

4.4 Use of Passwords and Pass-Phrases for Remote Access Users

Access to the [Name of Organization] networks via remote access is to be controlled using either a one-time password authentication or a public/private key system with a strong pass-phrase.

Pass-Phrases

Pass-phrases are generally used for public/private key authentication. A public/private key system defines a mathematical relationship between the public key that is known by all and the private key that is known only to the user.

Without the pass-phrase to "unlock" the private key, the user cannot gain access. Pass-phrases are not the same as passwords. A pass-phrase is a longer version of a password and is, therefore, more secure. A pass-phrase is typically composed of multiple words.

Because of this, a pass-phrase is more secure against "dictionary attacks." A good pass-phrase is relatively long and contains a combination of upper- and lowercase letters and numeric and punctuation characters. An example of a good pass-phrase is:

"The###TrafficOnThe101 as***ThisMorning."

All of the rules above that apply to passwords apply to pass-phrases.

5. Enforcement

Any employee found to have violated this policy may be subject to disciplinary action and loss of network privileges.

6. Definition

Application Administration Account: Any account that is for the administration of an application (e.g., Oracle database administrator, ISSU administrator).

Appendix D

Bibliography

"GuideBook" section prepared by Graduate Students at Mississippi State University participating in:
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We respectfully offer this document to those who anticipate writing a technology plan in sincere hope that it will aide them in their task. We recognize this work as one that is “in progress.” This guide is a product of our collaboration at the time of publication, May 7, 1996. We expect and desire others to critique, expand, and improve this endeavor. The original guidebook was developed by students in June, 1995. This was an excellent work; however, several revisions were needed. The following authors, therefore, created Version 2.0:

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Appendix E

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About Your Instructor ...

I was born in 1953 at the Presidio in San Francisco, California. The second child of Maj. John and Bette Jane Young, I was enthusiastically welcomed by my only sibling - a brother, six years my senior. After my dad retired from the Army he still had a touch of the wanderlust so we spent the next few years exploring Wyoming and Colorado. In 1963 we settled in Durango where my brother and I spent our days climbing trees, skipping stones across the Animas River, and exploring the La Plata mountains, which were our backyard.

In the late 1960s my parents moved back to the Bay area of California where I finished high school then went off to college, enrolling at California State University in Fresno. I majored in Mass Communications - a combination of English, Theater Arts and the technical aspects of radio, television and film production. I had those typical, youthful aspirations of becoming a 'rich and famous' script writer and filmmake . Upon graduation I partnered with a local film production company and spent the next several years writing, producing and filming documentaries and television commercials.

A combination of the reality of parenthood and a souring economy in the early '80's guided my decision to return to school to obtain my teaching credential. The birth of my daughter, in 1983, cemented my decision to opt for the stability of teaching over the uncertain world of the arts. I began as a classroom teacher at the same time computers were first being introduced to the public, in general, and schools. I have always had an affinity for machines and gadgets so I soon transitioned from 'traditional' teaching to working with technology in education; the best decision ever!

Within a year I was the Technology Teacher/Coordinator for a small high school; teaching programming in a lab and setting up local area networks. As technology evolved and became more affordable, the District purchased classroom computers and I, seeing the need, began writing record-keeping and database programs for teachers.

By the early '90's I was assisting with technology District-wide and speaking at regional and state conferences. It was at this time I began teaching summer and weekend seminars at Fresno Pacific University (then Fresno Pacific College) on integrating technology in to the classroom. Through membership in CTAP (California Technology Assistance Project) I also provided professional development, planning, and implementation assistance to help schools utilize technology to support teaching and learning.

I recently retired after more than 30 years of service to Madera Unified School District. With my 'extra' time, I will be developing new courses for Fresno Pacific. My wife, Becky, and I enjoy interacting with teachers from all over the country - we recently began traveling across the US on Amtrak and have already logged over 10,000 miles riding the rails, making whistle stops at many of your hometowns!

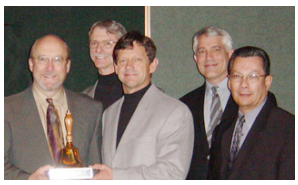
Using a Steadicam during the filming of a commercial for a regional TV station in the days before gray hair!

My beautiful bride Becky, on our wedding day! After all these years she's still the love of my life (and the world's greatest cook!).

Taking a break at my desk at Madera Unified, while administering an early (circa 1990) school-wide network.

Scuba diving (a passion of mine) with my daughter off the coast of Maui, in the beautiful state of Hawai'i.

Fishing the Animas River in Durango, CO, where my brother and I used to roam. Pretty nice catch! We only keep what we eat, and this one was delicious!



Rreceiving California's prestigious Golden Bell Award in San Francisco for an exemplary program in technology, with Madera Unified school board trustees.

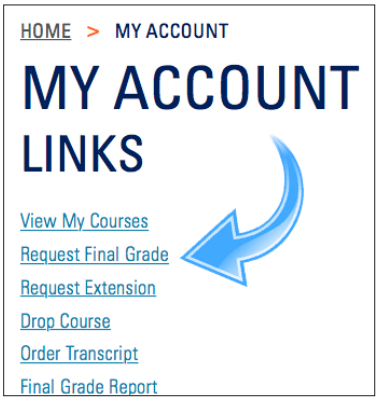
Visiting the St. Louis Arch with my wife Becky - a day trip from Indianapolis after attending the Indy 500.

Me with Becky's family, including her three children and all eight (so far!) of our grandkids, at Becky's parents' 60th wedding anniversary celebration.

DIRECTIONS FOR SUBMITTING A REQUEST FOR ONLINE GRADING

FPU requires I submit your grade online. For me to do that you must request online grading via your FPU account. When you've submitted your completed coursework (no sooner):

- Login to your account on the CPD website at ***https://ce.fresno.edu/my-account***
- Click on 'Request Final Grade'
- Select this course from the list of ungraded courses in which you are currently enrolled
- Click the box confirming accuracy of the informatio
- Click Submit
- FPU will email me that you have completed the course and are ready to be graded



Please submit your request for online grading the same day you submit your completed coursework (no sooner). I cannot submit your grade until online grading has been requested.

If I receive your final coursework but you've yet to request online grading, expect a delay while I attempt to contact you in reminder. If you encounter technical difficulties with the online grading system please contact FPU directly; I am unable to troubleshoot their system.

Once I have submitted your grade to FPU I will notify you via email that this has been accomplished. Processing grades submitted electronically is not automatic; FPU strives to post grades the same day, but it may take up to 2 business days to certify and post your grade (FPU will email you once your grade has been posted).

Prior to ordering a transcript, particularly a '*RUSH'* transcript, verify your grade has *officially* been posted. Login to your FPU account and click Final Grade Report. If your grade in this course appears, print off your Final Grade Report (FPU no longer mails Grade Reports - you must print them out yourself) and proceed with ordering transcripts.

If this course does not appear, although I notified you I submitted your grade, please contact FPU (1-800-372-5505) directly with your inquiry. It may be they are 'holding' your grade for whatever reason, typically if you are overenrolled.

I hope you found the course beneficial. Again and as always, thanks!