WEST VIRGINIA
SECRETARY OF STATE
KEN HECHLER
ADMINISTRATIVE LAW DIVISION

Form #1

Do Not Mark In this Box

FILED

SEP 18 3 51 PM '96

OFFICE OF WEST VIRGINIA SECRETARY OF STATE

NOTICE OF PUBLIC HEARING ON A PROPOSED RULE

AGENCY: West Virginia Board of Education TITLE NUMBER: 126

RULE TYPE: Legislative ; CITE AUTHORITY W.Va. Const., Article XII, §2, W.Va. Code §§18-2-5 and 18-2E-7

AMENDMENT TO AN EXISTING RULE: YES____ NO X

IF YES, SERIES NUMBER OF RULE BEING AMENDED: _____

TITLE OF RULE BEING AMENDED: _____

IF NO, SERIES NUMBER OF NEW RULE BEING PROPOSED: 43

TITLE OF RULE BEING PROPOSED: Use of Technology by Students and Educators (2470)

DATE OF PUBLIC HEARING: November 12, 1996 TIME: 7:00 p.m.

LOCATION OF PUBLIC HEARING: Independence Jr. High School, Beckley (Sophia); Cabell Midland High School, Huntington; Museum of Culture and History Theater, Charleston; Eastern Greenbrier Jr. High School, Lewisburg; Parkersburg South High School, Parkersburg; Wheeling Park High School, Wheeling; East Fairmont High School, Fairmont; and James Rumsey Technical Institute, Martinsburg

COMMENTS LIMITED TO: ORAL____, WRITTEN____, BOTH XX

COMMENTS MAY ALSO BE MAILED TO THE FOLLOWING ADDRESS:

William J. Luff, Jr.
Associate State Superintendent
WV Department of Education
Building 6, Room 360
1900 Kanawha Blvd., East
Charleston, WV 25305-0330

The Department requests that persons wishing to ~~make~~ comments at the hearing make an effort to submit written comments in order to facilitate the review of these comments.

The issues to be heard shall be limited to the proposed rule.

ATTACH A **BRIEF** SUMMARY OF YOUR PROPOSAL

Cynthia E. Evans
Director, Legal Services

11.20

West Virginia Board of Education
Notification of Public Hearings

Policies: 1100 (Guide to Implementation of S.B. 300)
2510 (Assuring the Quality of Education: Regulations for Education Programs)
2520 (Instructional Goals and Objectives for West Virginia Schools)
2340 (Statewide Assessment Program)
2470 (Use of Technology by Educators and Students)
2320 (Performance-Based Accreditation System)

Public Comment Period Ends: November 15, 1996

Eight public hearings regarding these policies will be held at 7:00 p.m. on November 12, 1996 at the following locations:

Beckley (Sophia): Independence Junior High School

Huntington: Cabell Midland High School

Charleston: Museum of Culture and History Theater

Lewisburg: Eastern Greenbrier Junior High School

Parkersburg: Parkersburg South High School

Wheeling: Wheeling Park High School

Fairmont: East Fairmont High School

Martinsburg: James Rumsey Technical Institute

Additional Information About the Hearings:

- Persons desiring to speak **must sign in** at a hearing location between 6:15 and 6:45 p.m. the night of the hearing. Speakers will not be registered by telephone.
- Speakers will receive **a maximum of five (5) minutes** for their remarks
- Speakers must provide a **written copy** of their remarks to the hearing moderator
- Smoking is not permitted at any of the hearing locations

1119dav/11a

WEST VIRGINIA DEPARTMENT OF EDUCATION

Dr. Henry R. Marockie, State Superintendent of Schools
Building 6/1900 Kanawha Blvd. E./Charleston, West Virginia 25305-0330
Phone: 304-558-2681
Fax: 304-558-0048

West Virginia Board of Education

Cleo P. Matheos, President
Sheila M. Hamilton, Vice President
James J. MacCallum, Secretary
Michael D. Greer
Audrey S. Horne
Jim L. McKnight
Paul J. Morris
Charles H. Wagoner
Gary G. White

September 1996

Dear Colleagues:

S.B. 300 provides a unique opportunity to improve student achievement and prepare students for post-secondary education and their eventual entrance into the workplace. To implement the provisions of S.B. 300, a number of educators, parents and interested citizens from around the state have joined with Department of Education staff to revise and update policies. Enclosed for your information and review are copies of those policies. They have been placed on public comment until November 15, 1996 by the West Virginia Board of Education.

On the reverse side of this memorandum is a notice of public hearings on the policies. The hearings will be held in each region of the state on November 12, 1996.

The policies enclosed are:

Policy 1100..... Guide to Implementation of S.B. 300. We suggest you review this policy first as it will direct you to the various changes that are being made to implement S.B. 300

Policy 2510..... Education Programs. This is the basic policy that defines education in public schools in West Virginia.

Policy 2520..... Instructional Goals and Objectives. This policy incorporates by reference the newly-revised instructional goals and objectives for the four core areas of English language arts, mathematics, science and social studies.

Policy 2340..... Statewide Assessment Program. This policy details the new statewide assessment program.

Policy 2470..... Use of Technology by Educators and Students. This policy provides general rules for the use of technology for instruction and incorporates by reference the statewide technology plan.

Policy 2320..... Performance Based Accreditation System. Many of the performance measures and high quality standards have been revised and are incorporated in this policy.

We encourage you to review the policies and submit any comments you may have. Each policy has attached to it a comment form that contains the name and address of the Department staff professional to whom the comments should be sent. We also invite you to attend the public hearing on November 12 closest to you.

Thanks for taking the time to look through the policies. We appreciate the work you do for the children of West Virginia.

Henry Marockie
State Superintendent of Schools

HM:dav
1118dav/11a

EXECUTIVE SUMMARY
WEST VIRGINIA BOARD OF EDUCATION

POLICY NUMBER AND TITLE: **Policy 2470**
Use of Technology by Students and Educators

PUBLIC COMMENT PERIOD ENDS: November 15, 1996 **ADOPTED: _____**

BACKGROUND:

As the use of technology advances, there is a need to provide clear direction and guidance with regard to the use of technology in West Virginia schools and other instructional settings. This policy reflects the commitment of the West Virginia Board of Education to integrate technology into the curriculum and other applicable educational arenas.

PURPOSE:

As mandated by Senate Bill 300 and as outlined in Policy 2510, this policy provides structure for the collaboration, staff development, equitable access and integration of technology into all curricular areas. It also provides guidance for the use of technology to extend career awareness, career exploration, work-based learning and post-secondary education information. To assist schools and local districts in complying with this policy, the West Virginia Educational Technology Plan, developed by the West Virginia Technology Task Force, guides integration and implementation of these technology.

126CSR43

TITLE 126
LEGISLATIVE RULE
BOARD OF EDUCATION

SERIES 43
USE OF TECHNOLOGY BY STUDENTS AND EDUCATORS (2470)

§126-43-1. General.

1.1. Scope. -- This policy establishes regulations for educational technology for West Virginia public schools.

1.2. Authority. -- W.Va. Constitution, Article XII, §2, W.Va. Code §§18-2-5 and 18-2E-7.

1.3. Filing Date. --

1.4. Effective Date. --

1.5. Repeal of former rule. -- None. This is a new rule.

§126-43-2. Purpose.

2.1. Students of all ages and citizens as lifelong learners require both the necessary skills and access to technology tools to take responsibility for their own learning, to be actively involved in critical thinking and problem solving, to collaborate and cooperate and to develop as productive citizens. Technology must be interwoven with educational improvements and reform to accomplish educational goals, increase student achievement and provide increased opportunities for lifelong learning.

§126-43-3. Use of Technology.

3.1. Technology, especially computers, will be used to enhance both the academic achievement and the workplace readiness of all students.

3.2. The following statements delinate the responsibilities of the State Board, county boards, and individual schools for the use of technology in instructional settings.

3.2.1. State Board Responsibilities:

a. All students will be provided equal access to technology.

b. All students will graduate from the public schools with proficiency in basic computer skills.

c. Computer technology objectives will be included as part of the instructional goals and objectives of all programs of study.

d. The State Board will collaborate with the higher education community to ensure complementary technology initiatives.

e. Administrators and teachers will be provided staff development in the use of technology and its application in the teaching and learning process.

3.2.2. County Board Responsibilities:

a. All county boards shall have a county technology team and a comprehensive technology plan.

b. Computer technology skills shall be included in all programs of study, particularly in the areas of career awareness, career exploration, work-based learning and for use in accessing post- secondary education information.

c. County boards shall, whenever possible, make available facilities and technology to facilitate distance learning.

d. County boards, in cooperation with schools, shall provide students (including those enrolled in adult basic education), teachers, parents and citizens access to technology, especially computers, in the public schools during non-school hours.

e. County boards shall provide staff development in the use of technology and its application in the teaching and learning process.

3.2.3. School Responsibilities:

a. Local school improvement councils shall include in the Unified School Improvement Plan mechanisms to foster the use of school facilities for the purpose of accessing technology, especially computers, by students, teachers, parents and citizens during non-school hours.

b. Every school shall have a school technology team and a comprehensive technology plan.

c. Computer technology skills shall be taught and utilized throughout the programs of study.

d. The Unified School Improvement Plan will include necessary staff development to enable teachers to incorporate technology into the classroom.

§126-43-4. Incorporation by Reference.

4.1. A copy of the West Virginia Educational Technology Plan is attached. Copies may be obtained in the Office of Technology, West Virginia Department of Education.

§126-43-5. Implementation.

5.1. The West Virginia Department of Education shall review and revise the West Virginia Educational Technology Plan as needed.

5.2. County boards and schools shall ensure implementation of this policy and the West Virginia Educational Technology Plan in cooperation with the State Board.

POLICY 2470: USE OF TECHNOLOGY BY STUDENTS AND EDUCATORS COMMENTS/SUGGESTIONS

Directions: Please use this form in commenting on proposed Policy 2470.

Individual/Organization: _____

Title: _____

Street Address: _____ ***City/State/Zip:*** _____

Comments/Suggestions
126-43-1. General
126-43-2. Purpose
126-43-3. Use of Technology

126-43-4. Incorporation by Reference
126-43-5. Implementation

RETURN COMMENTS BY NOVEMBER 15, 1996 TO:

William J. Luff, Jr.
Associate State Superintendent
West Virginia Department of Education
Building 6, Room 360
1900 Kanawha Boulevard, East
Charleston, West Virginia 25305-0330

1110dav/11a

FORM HD 201
(10-66)

FISCAL NOTE WORKSHEET
(Submit 4 Copies)

HD NO _____ DRAFT NO _____ BILL NO _____ RESOLUTION NO _____

SUBJECT Policy 2470: Use of Technology by Students and Educators FUND _____

SOURCE OF REVENUE: ☐ GENERAL FUND ☐ SPECIAL ☐ OTHER (SPECIFY) _____

COST OF ESTIMATE BASED ON: ☐ AN ORIGINAL ESTIMATE ☐ BUDGET BILL ☐ OTHER (SPECIFY) _____

INCOME ESTIMATE BASED ON: ☐ AN ORIGINAL ESTIMATE ☐ BUDGET BILL ☐ OTHER (SPECIFY) _____

SHOW OVER-ALL EFFECT IN ITEMS 1 AND 2 & GIVE EXPLANATION OF BREAKDOWN BY FISCAL YEAR INCLUDING LONG-RANGE EFFECT

EFFECT OF PROPOSAL	ANNUAL		FISCAL YEAR		
	INCREASE	DECREASE	CURRENT	NEXT	THEREAFTER
1. ESTIMATED TOTAL COST	$	$	$	$	$
PERSONAL SERVICES CURRENT EXPENSES REPAIRS/ALTERATIONS EQUIPMENT OTHER	$	$	$	$	$
2. ESTIMATED TOTAL REVENUES	$	$	$	$	$

3. EXPLANATION OF ABOVE ESTIMATES (INCLUDING LONG-RANGE EFFECT):

NO COST.

DATE: September 4, 1996

AGENCY: West Virginia Department of Education

AUTHORIZED REPRESENTATIVE: _____

WEST VIRGINIA

EDUCATIONAL TECHNOLOGY

PLAN

Submitted by:

WEST VIRGINIA
TECHNOLOGY TASK FORCE

As part of the:

West Virginia Education First Panel
and
Educate America Act

Gene Burns, Chair

Education First Technology Committee
West Virginia Technology Task Force

FOREWORD

The Technology Committee and the Technology Task Force were created in response to the Educate America Act as a part of West Virginia's Education First Panel. The 47-member Technology Task Force is an impressive group of people with diverse expertise all related in some manner to education and technology.

After two task force meetings, four committee meetings and a dozen more meetings with work teams and staff, we submit the following report with a sense of accomplishment and yet a realization that as rapidly as technology is changing, this of all reports must be viewed as a constantly evolving document.

We began our study by reviewing the current status of technology and its administrative and instructional applications in West Virginia. From that point, a vision and the following plan evolved. The broad components of the plan include:

I. Coordinated Leadership
II. Adequate Funding
III. Infrastructure and Equitable Access
IV. Staff Development
V. Curriculum Integration
VI. Assessment

Based on the feedback from eight regional workshops, these components addressed the issues raised by the public. The challenge now is to mobilize our number one resource--our people--to become actively involved in statewide coordination and local implementations. This will provide our citizens with the necessary skills and access to technology tools to take responsibility for their own learning...and to develop as productive West Virginians in a worldwide economy.

Gene Burns

Gene Burns, Chair
Technology Committee and
Technology Task Force

WEST VIRGINIA EDUCATIONAL TECHNOLOGY PLAN

Table of Contents

WEST VIRGINIA EDUCATIONAL TECHNOLOGY PLAN

INTRODUCTION

> *"We are at a wonderful period in the history of ideas and technology as these subjects relate to the restructuring of public education. We have, for one of the few times in history, a convergence of pedagogical thought and technological breakthroughs that fit like a hand in a glove."*[1]

Efforts have been ongoing to make changes and develop educational standards for all Americans since the publication of *A Nation at Risk* which stated that if something wasn't done to change our educational system, the United States would lose its role as a world leader.[2] The national Educate America Act has provided states with the opportunity to further their respective reforms by funding plans for change and improvements. Specifically, Section 317 in this Act requires state planning for integrating technology into the curriculum in order to improve student achievement.

In West Virginia, reform efforts have been occurring since the 70's; and major reform legislation passed in 1989-90. The Educate America Act has been welcomed as a partial funding mechanism to continue planning and implementation of educational improvements. The Act indicated that each state should convene an advisory panel comprised of members from all stakeholder groups. On November 30, 1994, the **West Virginia Education First Panel** met to accept the charge from the Governor and State Superintendent of Schools to recommend a state strategic plan designed to improve the success of all students.

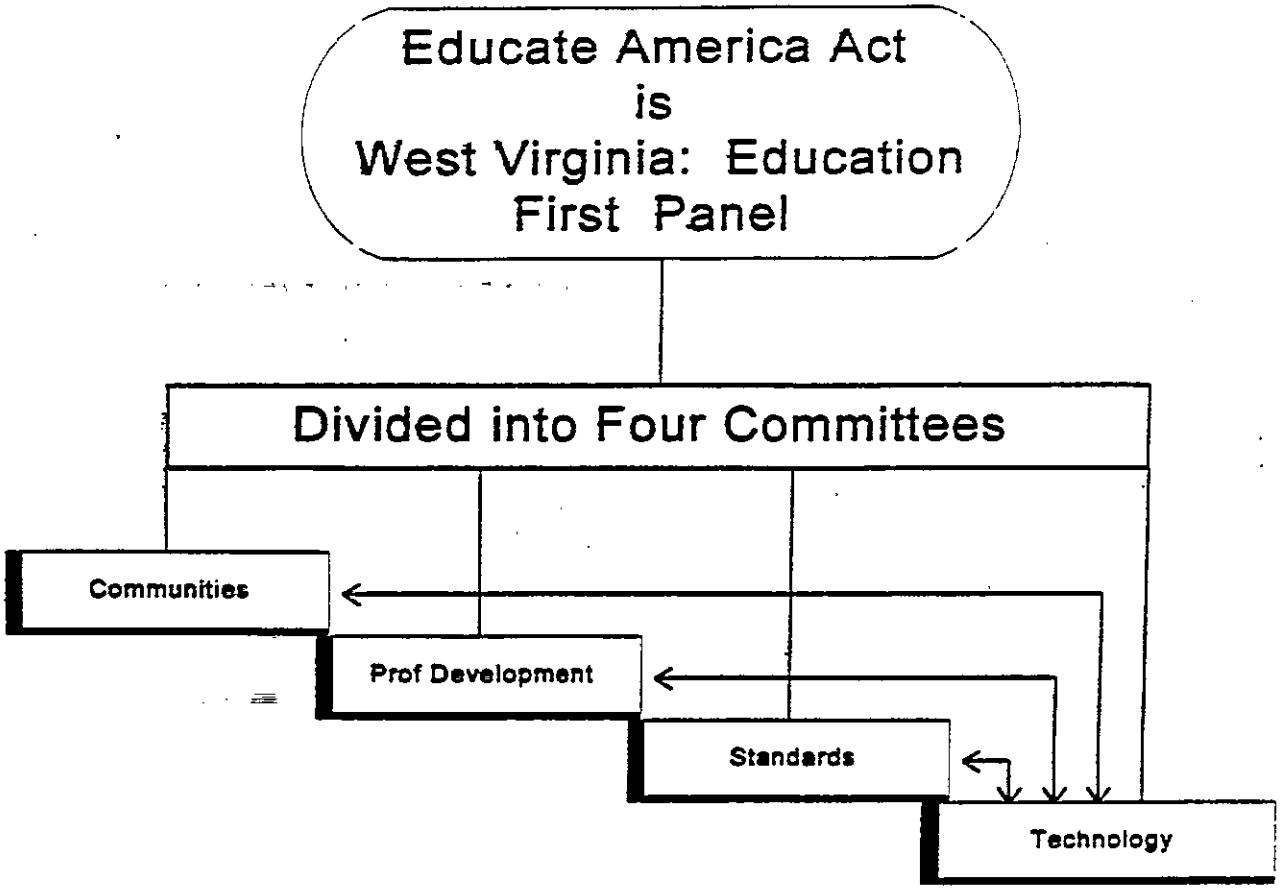
As the first step in the planning process, the West Virginia Education First Panel divided into **four major committees to address Communities, Professional Development, Standards, and Technology** as focus areas to achieve the goals. In addition to the Panel, a separate, but coordinated **Technology Task Force** was organized to meet the requirements of Section 317 of the Educate America Act which deals specifically with the integration of technology to meet the national and state goals. The Technology Committee served as a liaison between the Education First Panel and the Technology Task Force.

---

[1]David D. Thornburg, *Education, Technology, and Paradigms of Change for the 21st Century*, p. 7.

[2]Felicia Donovan and Cary Sneider, "Setting and Meeting the National Standards--With Help From Technology," *Technology & Learning*, p.40.

The Technology Committee members of the Education First Panel are also members of the larger, separate Technology Task Force. Mr. Gene Burns, who represents business and industry, chairs both the Technology Committee and the Technology Task Force. The following diagram illustrates the coordination of the Technology Task Force and the Education First Panel.



Technology Task Force

The Technology Task Force will provide input to the Education First Panel through the Technology Committee to plan for improved student learning with the use of technology.

The input will include the technology planning charges listed in Section 317 of the Educate America Act.

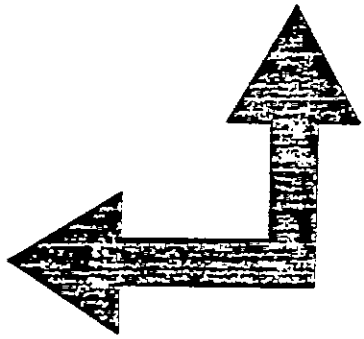


Diagram 1

Diagram 1 illustrates that technology must be integrated into the other three committee areas of Communities, Professional Development, and Standards. The Technology Committee has worked closely with the Technology Task Force to incorporate the Task Force feedback into other committee plans. The Technology Committee members made a presentation to the other committees about the benefits of technology in the other areas of communities, professional development and standards. This demonstrated how technology could now and in the future benefit these areas, as well as others.

Diagram 2 relates the separate, but overlapping structures to produce a state technology plan and a state improvement plan. Technology must be incorporated into the improvement plan to help accomplish the state and national goals. The technology plan will contain specific technology tasks to meet the goals.

EDUCATE AMERICA ACT
West Virginia Planning Integration

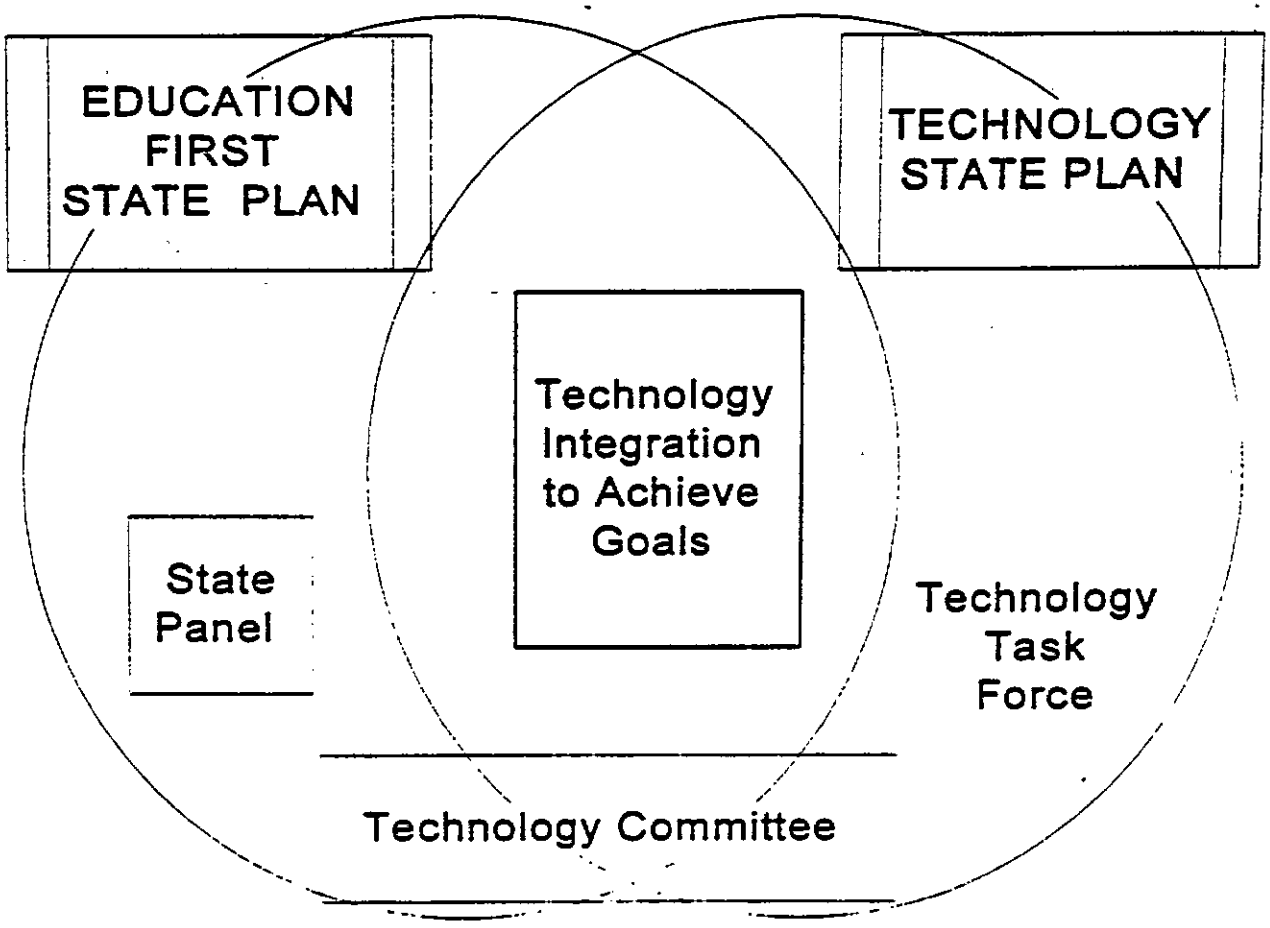


Diagram 2

TECHNOLOGY TASK FORCE (TTF) MEMBERS

*Technology Committee (TC) Members

Linda Arnold--West Virginia Cable Association Executive Director
Mary Barbour*--West Virginia PTA President, Panel Standards Committee Member, Parent
Brian Bigalow--West Virginia University Student Body President
Dan Blackwood--WVDE, Video Coordinator Services, Technology Priority Team Member
Craig Blurton--Associate Director, NASA Classroom of the Future
Ann Brotherton--WV Educational Broadcasting Authority Chair, State Chamber of Commerce
Matt Brown--Information Systems & Communications, Department of Administration, DLCC Member
Gene Burns*--Chair of TC and TTF, Education First Panel and Work Team, Monongahela Power
Bill Burrall*--Marshall County Teacher, National Technology Teacher of the Year
Suzy Calvert--Raleigh County Teacher, Technology Demonstration Site Coordinator
Will Carter--Executive Assistant, Governor's Office
Jonathan Caldwell--Network Technician, Appalachia Educational Lab
Teddi Cox--WVDE, Education First Panel Facilitator
Dan Daniel*--Wood County Teacher, Technology Demonstration Site Coordinator
Martha Dean--Wetzel County Superintendent, WV Technology Team Delegate to Washington
Ron Dellinger--RESA VII Executive Director
Zane Gherke--Calhoun-Gilmer Career Center Teacher, WV Computer Using Educators President
Billy Jack Gregg--Public Service Commission Consumer Advocate
William Grizzell*--Nicholas County Superintendent
Tom Hefner--Braxton County Board of Education Member
Julia Hutchison*--Cabell County Teacher, WV Technology Team Delegate to Washington
David Ice*--Senior Program Coordinator, Education & the Arts, DLCC Chair
Terry Idell--Executive Director, Appalachia Educational Lab
Lloyd Jackson--Chair, Senate Education Committee, West Virginia Legislature
James Justice--WVNET, InfoMine/Library Access Grant Principal Investigator
Phyllis Justice--WVDE, Telecommunications Specialist, Office of Technology
Tom Kinney--Capitol Cable Vision General Manager
Kathy Knighton--WVDE Technology Priority Team Member, Assistive/Adaptive Technology
Sharon Lee--WVDE, Technical Assistant, Office of Technology and Information Systems
Bill Luff--WVDE, Associate State Superintendent of Schools
Bonnie Lynch--WVNET, Internet K-12 Access Administrator and Systems Operator
Thecla Maguire--Deputy Secretary, Department of Administration
Cleo Mathews--West Virginia Board of Education Member, College of West Virginia Instructor
Torie McCloy--Wirt County High School, Future Business Leaders of America State President
John McClure--WVDE, Director, Office of Technology and Information Systems
Rebecca McClure--Bridging the Gap Participant, Higher Education Student
David Mohr--Education & the Arts, School-to-Work Grant Administrator
Lisa Perkins--Kanawha County Teacher, American Federation of Teachers Representative
John Plesich*--World School Program, West Virginia Bell Atlantic
Roman Prezioso--Chair, House Education Committee, West Virginia Legislature
Rita Ray*--WV Educational Broadcasting Executive Director, DLCC Member
Ed Riker--RESA VIII Computer Technician
Jack Sanders*--Appalachia Educational Lab
Eileen Shaver--Wirt County Teacher, RESA V Technology Planning Committee Member
Fannie Waller--Logan County Teacher, Library/Media Specialist
Karen White--Mingo County Teacher, Technology Demonstration Site Coordinator
Brenda Williams*--WVDE, Assistant Director, Office of Technology and Information Systems, DLCC Member

DLCC--Distance Learning Coordinating Council
RESA--Regional Education Service Agency
WVDE--WV Department of Education
WVNET--WV Network for Educational Telecomputing

BACKGROUND

Planning:

The West Virginia Department of Education, Office of Technology and Information Systems, is responsible for planning and implementing the K-Adult instructional and administrative technology in the public schools. This is accomplished under the direction of the State Superintendent of Schools through the approval of the West Virginia Board of Education.

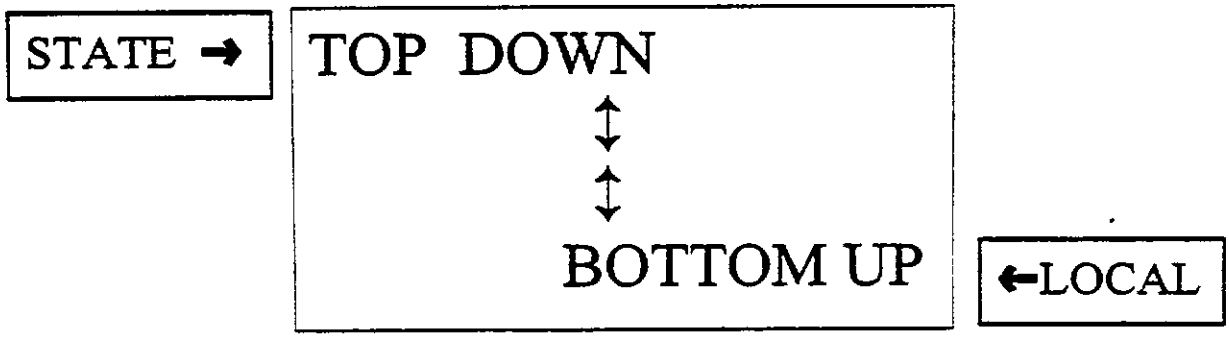
The Office of Technology and Information Systems, in conjunction with Regional Education Service Agencies and Local Education Agencies (55 county school districts), provides planning and technical assistance in the use of instructional technology and information systems. These uses will facilitate reaching the national, state, and local goals of public education. (See Attachment A for the education goals.)

The West Virginia Department of Education in 1993 named an internal "Technology Priority Team" to develop a plan. The plan would provide the necessary tools and staff development for educators and students to effectively utilize the following:

1. basic technology production tools including word processing, spreadsheets, databases, and telecommunications.
2. appropriate software and courseware to meet instructional and administrative goals and objectives.
3. various methods of learning styles through instructional technology equipment and special adaptive/assistive devices.
4. information access and knowledge navigation technology.

These global objectives were to be accomplished through a West Virginia teacher-designed model of a "Two-Directional Implementation" (TDI) approach. This approach surfaced during the 1989 planning for the Basic Skills/Computer Education project.

TWO-DIRECTIONAL IMPLEMENTATION
(TDI)



for
Communications and Accomplishments

Diagram 3

The "bottom up/top down" concept, as well as other Priority Team implementation objectives, have been woven into the Technology Task Force recommendations. It was important to have Priority Team representation on the Technology Task Force to provide history and continuity. The Task Force reinforced and expanded the Priority Team's concepts. Diagram 4 depicts the communications expansion of the TDI to a multi-directional approach (MDI). In addition to the "bottom up/top down" concept, any level may also be collaborating between and among any other level(s). Additional detail about the MDI is presented in Diagram 5, page 9, when the multi-directions are incorporated into the organizational structure. It is important to note that the "bottom up/top down" concept has been reversed to place students at the top.

MULTI-DIRECTIONAL IMPLEMENTATION (MDI)

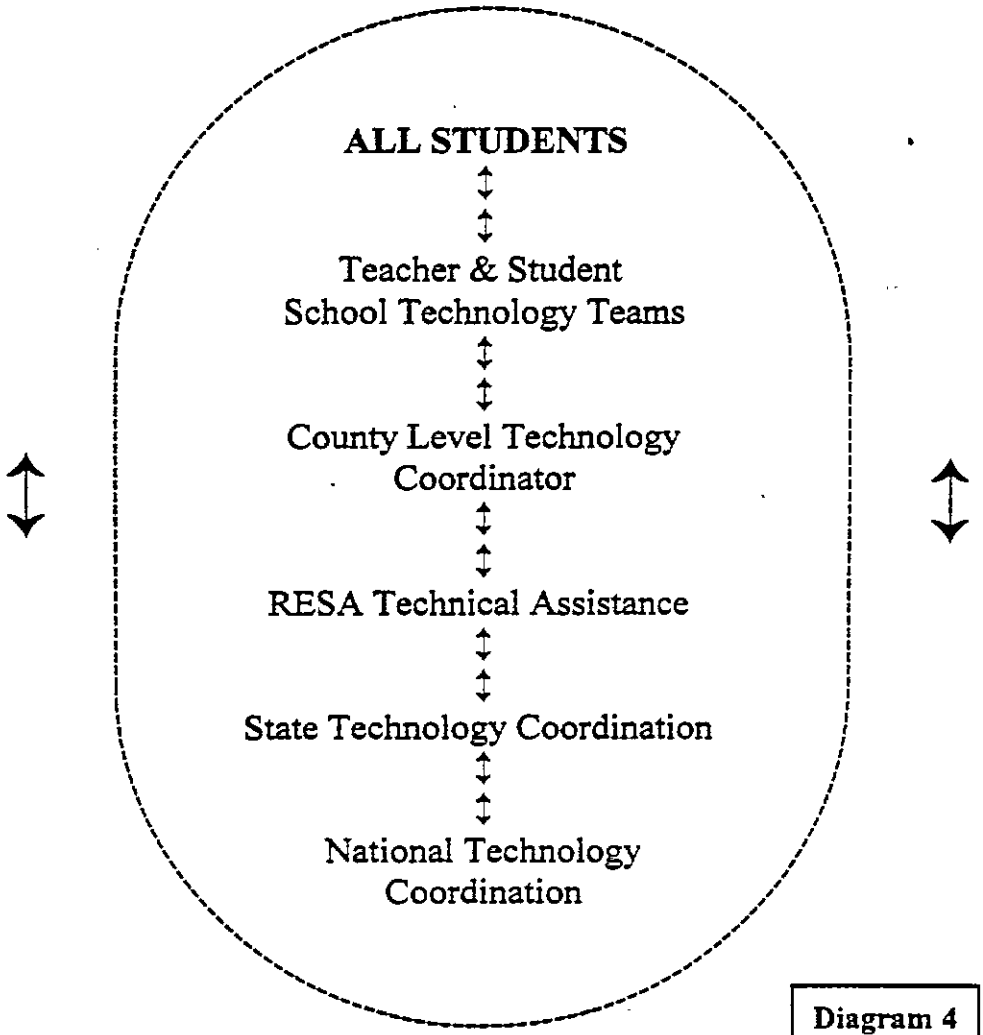


Diagram 4

The Priority Team also reviewed planning models for schools and counties to follow when developing local technology implementation plans.

Public School Demographics

There are four basic levels in the West Virginia K-adult public education system: the individual school, the County Board of Education (Local Education Agency), the Regional Education Service Agency (RESA), and the State Board of Education. There are 55 Local Education Agencies (LEA) and 8 RESAs.

The RESAs are governed by the counties or LEAs that they serve. At the RESA level, computer technicians maintain computer equipment for the LEAs and schools. Each RESA is also a processing site for the administrative information system.

Other West Virginia facts include:

--55 counties collectively have 900 K-12 schools
--24 counties have only one high school
--No county has less than 1,000 students
--Approximately 310,000 pre-K--12 students
--Approximately 20,900 teachers
--Largest county student population is 33,545
--Smallest county student population is 1,146
--15.7 average years of experience for teachers/administrators

West Virginia is in the forefront nationally in the use of technology for both administrative and instructional purposes. For a state that ranks 49th in per capita income, but 3rd in the percent of income that goes to support education, pouring additional personnel and funds into schools is not possible. It is firmly believed that technology provides the catalyst for educational reform. The expenditure of $60 million in the past five years for administrative and instructional K-12 technology is a measure of our commitment to quality instruction. The results have included improved administrative processes, decision making and instructional gains.

Implementation History

The Governor and the State Superintendent of Schools have worked closely with the Legislature, State Board of Education, business and industry, local educators, parents and community to create and pass a 1989-90 comprehensive educational reform package.

Under the West Virginia banner of EDUCATION FIRST: OUR FUTURE DEPENDS ON IT, statewide community and parental input sessions were held through numerous town meetings, focused study groups, and teacher task forces. The State acted upon those recommendations such as making changes for school governance by creating local school improvement councils, faculty senates and curriculum teams. Other changes were made: textbook adoption now includes learning technologies; each teacher has an individual budget for curriculum materials;

and teacher pay raises brought us from 49th to 32nd in the nation. Other capital commitments included a major emphasis on staff development for teachers and administrators, a ten-year, $70 million dollar technology implementation in grades K-6, and a School Building Authority that has, or is currently building, 56 new schools and renovated over 470 buildings. These facility structures include appropriate curriculum changes, equipment, wiring and technology with a cost exceeding $430 million.

All of these school reform efforts are guided by the Constitutional requirement to provide a "thorough and efficient education" and to provide educational equity.

Technology can provide exciting, non-threatening opportunities for change, even in communities where education has not been valued and where teachers and students have low educational expectations. Change ~~is non-threatening only~~ if our schools, staff, parents and the community are prepared to use technology effectively.

TECHNOLOGY TASK FORCE VISION

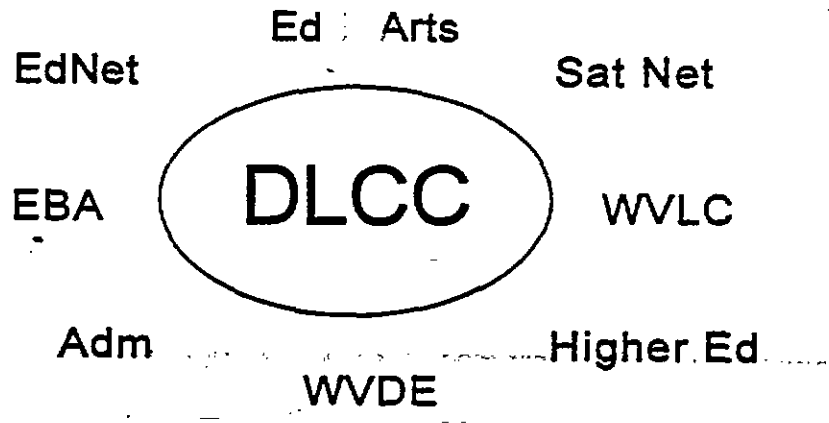
Students of all ages and citizens as lifelong learners will have the necessary skills and access to technology tools to take responsibility for their own learning, to be actively involved in critical thinking and problem solving, to collaborate and cooperate, and to develop as productive West Virginia citizens in a worldwide economy.

To move from the Industrial Age through the Information Age to the Communications Age, stakeholders must establish coordinated efforts and collaborative projects to meet the changes and challenges. The collaborative work will provide the statewide infrastructure to ensure that the skills and technology tools will be provided to all West Virginians to meet the state and national educational goals.

Creating an active statewide technology structure will link the student in the classroom to the statewide technology coordination council and to national resources. This structure will use responsible agencies, parents, labor, educators, business partnerships, and community to promote and implement the use of technology to improve student learning at all levels.

Diagram 5 on the following page presents the detailed and expanded technology organizational structure. It depicts the Distance Learning Coordinating Council (DLCC) developing into the statewide Technology Coordinating Council (TCC). The TCC would communicate with and through the County and RESA to assist the schools and teachers, but to ultimately provide better learning opportunities for the students. The school technology team will work with the local school improvement council (LSIC) to organize a local CTCC (County Technology Coordinating Council) for better communications regarding technology use. Legislation changes will reflect operations details and membership of the TCC.

WEST VIRGINIA TECHNOLOGY COORDINATION



CURRENT

DLCC--Distance Learning Coordinating Council

The primary focus is interagency cooperation initially dealing with only distance learning.

PROPOSED

TCC--Technology Coordinating Council

The primary focus will shift to comprehensive technology coordination with agencies, educators, business, labor and communities to improve student achievement.

The current DLCC legislation would be updated to include these recommendations.

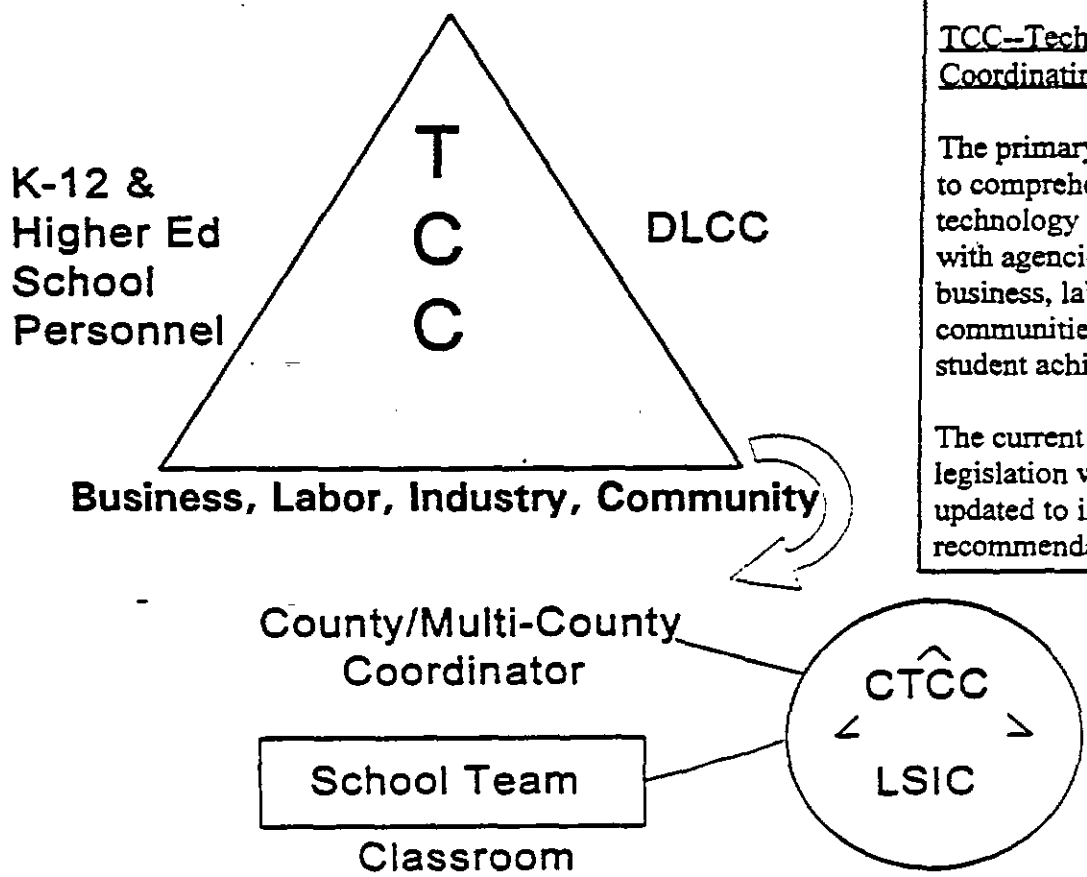


Diagram 5

The vision integrates the use of technology in the national education goals and the West Virginia Education Goals (Attachment A). Although implied in the state and national goals, two other areas or programs in which technology must be integrated are Opportunity-to-Learn Standards and the West Virginia School-to-Work Opportunities System (Attachment B).

The Technology Task Force has reviewed other state plans, federal and state technology grant applications, and vision documents like the National Information Infrastructure (NII). The Executive Summary of *The National Information Infrastructure: Requirements for Education and Training* lists 19 requirements for the NII. The Technology Task Force supports these vision requirements for the national infrastructure and also supports the concepts for a state and local infrastructure.

Regardless of the vision requirements related to infrastructure, equipment, staff development, partnerships, etc., one is appropriately reminded that the focus must be on students. One of the Technology Task Force members who is a student from Wirt County High School and the State President of the Future Business Leaders of America advocates:

> *An educational technology plan is of no use without students. Students should be the prime focus of the plan. Even though schools receive more technology tools, the students should be assured usage of these devices. Equal access time should be allotted for all students to experiment with local area networks, electronic mail, Internet, and all other technology systems which are being integrated into West Virginia school systems. Convenient access to these systems should also be made available for the student's use at reasonable times, including before and after school, lunch periods, and during the summer vacation.*
>
> *Parental encouragement is the motivation for many children. However, many parents are not capable of providing assurance when they are unable to operate or even comprehend the technology systems initiated in their child's classroom. A program developed to provide joint learning for the parent and child would produce greater student development and comprehension levels, and also insure parental approval of school technology programs. This would benefit the student by motivating his/her technology expansion in the classroom as well as in the home.*
>
> *--Torie McCloy*

This reinforces the importance of the student at the top of the MDI model shown in Diagram 4 on page 6.

NEEDS AND RESOURCES ASSESSMENT

The "Background Section" of this document refers to the 1989-90 comprehensive educational reform legislation and the associated input and needs assessment activities. The following list illustrates the methods of needs assessment feedback.

Town meetings	Focused study groups
Teacher task forces	Legislative input
County/school requests	Leadership seminars
Local school improvement councils	Faculty senates/curriculum teams
Grant/staff development requests	Teacher technology organizations

The resources assessment will be later associated with the Task Force recommendations.

TECHNOLOGY PLAN COMPONENTS/OBJECTIVES

What Does It Take?

It takes a coordinated effort to develop a joint state and local organizational structure to work collaboratively toward achieving the vision and goals. This cooperative, organizational structure will consist of three main groups: (1) state agencies, especially those with state educational responsibilities; (2) local representation from K-12, higher education and public libraries; and (3) community, business and industry representatives. This Technology Coordinating Council (Diagram 5) will work together, provide outreach to others, and assist the responsible state, regional, and local agencies to accomplish integrated technology planning and implementation.

What Needs To Be Accomplished?

West Virginia has implemented or begun to implement educational reform initiatives including programs in administrative and instructional technology. Much has been learned from the ongoing statewide implementation of programs such as the administrative West Virginia Education Information System (WVEIS), the instructional Basic Skills/Computer Education (K-6) program, the beginning of the Bell Atlantic World School Internet program and the InfoMine library connections grant which includes public libraries and libraries in higher education and secondary schools. These and other established programs must continue, but concurrently, there is much more to be accomplished.

The Technology Committee and the Technology Task Force have drafted, reevaluated and are continuing to revise the following technology plan components, objectives and tasks. Some areas will have more detailed explanation or associated implementation strategies, depending upon the component and the implementation status.

The components and tasks include (but are not limited to):

I. Coordinated technology leadership and organizational structure at the local, regional, state and national levels.

A. Support the US Secretary of Education and his technology staff in developing a long-range plan to encourage the effective use of technology for lifelong learning.
B. Continue work with the Council of Chief State School Officers (CCSSO) in implementing learning technologies policies and participate in the State Technology Representative Organization.
C. Participate in the organization of the Southern Regional Education Board (SREB) Technology Cooperative.
D. Establish a West Virginia Technology Coordinating Council. (See Diagram 5)
E. Establish technology coordinators at the county (school district) or multi-county level.
F. Create teacher and student technology teams at the school level to develop school technology plan in conjunction with county plan.
G. Involve parents, community, business and industry at all levels.

II. Adequate technology funding.

A. Establish agency cross connections to maximize funds for technology.
B. Develop legislative proposals to consider:
   1. Establishing district funding on per pupil basis.
   2. Creating a "technology transfer fund" in conjunction with the Public Service Commission Consumer Advocate Office.
C. Continue established technology initiatives.
   1. Basic Skills/Computer Education Program (BS/CE)
      - Created by 1989 Legislature with Governor's Teacher Task Force--originally intended to be a 10-year program.
      - Funding provided by legislative appropriation and allocated to counties on per-pupil basis.
      - Current State funding level is $10 million/year.
      - Significant local "buy-in" with additional expenditures to accelerate program.
      - Provides for quality basic skills development and remediation in all public schools.
      - Overall implementation plan coordinated at State level with individual school and county implementations planned by local teams.
      - Provides for standardization of hardware across the State and standardization of software within county to facilitate training, support, maintenance, evaluation, and proper utilization.
      - Extensive, hands-on teacher training program.
      - Training component for administrators.
      - Program began in Kindergarten level; implementation progress varies by county, but is generally at 4th grade level statewide.

- As of April 1995, $44 million of the $70 million Basic Skills/Computer Education project has been issued in purchase orders.
- Over 15,000 workstations and 584 servers and local area networks have been installed in all elementary schools.
- Over 4,000 classrooms have student utilization.
- 15,862 student workstations are in use in addition to local area networks and file servers.
- Over 9,500 educators, representing all 55 counties, have been trained.

2. West Virginia Microcomputer Educational Network (WVMEN)
   - WVMEN is a toll-free statewide electronic bulletin board for educators, students, parents and community.
   - Implemented in 1982 with the installation of 73 local area networks and computer labs in secondary and vocational, technical schools.
   - WVMEN now serves over 9,000 users and receives over 5,000 calls per month.
   - System provides electronic mail, bulletin and conference areas, public domain software and curriculum material.
   - Excellent tool for students of all ages to learn to use telecommunications and telecomputing functions.
3. West Virginia Education Information System (WVEIS)
   - K-12 administrative statewide network is being implemented and will be installed in every school with processing power via one of eight AS400 regional centers.
   - All counties are connected and over 500 of the State's 900 schools are on line. The number grows daily.
4. Curriculum Technology Resource Center (CTRC)
   - Curriculum Technology Resource Center legislation provides technology materials selected by teachers for teachers.
   - The most common technology in the classroom when the legislation was created was the VCR. Therefore, teachers initially decided to evaluate and purchase instructional video tapes for all curriculum areas. Approximately 575 tapes were purchased with unprecedented unlimited duplication rights for West Virginia public school classrooms.
   - Teachers developed a West Virginia Technology Staff Development Model that focused on two types of training: (1) Awareness of what is available and how technology may be used to improve instruction and (2) Turnkey comprehensive staff development sessions that provide the training, instructional material, integration methods, courseware and equipment—a total package.
   - In 1993-95, teachers elected turnkey laser disc training and implementation. In three years, 508 teachers from 254 schools have received turnkey staff development.
5. Technology Demonstration Projects
   - Legislature has provided funds for K-12 multimedia and innovative uses of technology for teacher productivity and student utilization.
   - Forty demonstration sites have been established in schools throughout

the state to assist teachers in using multimedia in the classroom.

- Four IBM Ultimedia sites with higher education partnerships have been piloted.

6. Distance Learning Programs
   - Currently, there are 318 distance learning satellite downlink sites in K-12 schools, technical centers, higher education sites, public libraries and RESAs.
   - The competitive awards program for installing new sites and providing funding for course offerings is a joint effort of the West Virginia Department of Education and the West Virginia Educational Broadcasting Authority.
   - West Virginia is a member of the Satellite Educational Resources Consortium (SERC).
7. Bridging the Gap Distance Learning
   - Utilizes secondary satellite receive sites to provide higher education courses to students in five remote areas.
8. JTPA Technology Labs
   - JTPA instructional labs in almost all of the 55 counties.
   - Eight technology education pilot labs have been installed at the middle school level across the state. The labs provide hands-on activities using technology modules to explore career paths.
9. Microsoft Partnership
   - Over $1 million free software and CD-ROM implementations have been provided to schools through a partnership with Microsoft.
   - West Virginia Department of Education provides training of trainers and manages distribution of software.
10. Bell Atlantic World School Internet Project
    - Access through a Bell Atlantic partnership to provide 56kb connections, routers, and software installation to schools in Bell Atlantic-WV territory (about 80% of all schools).
    - 53 pilot schools are connected and in operation.
    - 100 teachers have been trained by Bell Atlantic.
    - 1,152 teachers have been trained by train-the-trainer approach.
    - Additional training of educators and installation of equipment is ongoing daily.

D. Fund new and coordinated programs.

1. Internet Access for All West Virginia Schools
   - West Virginia Department of Education (WVDE) and West Virginia Network for Educational Telecomputing (WVNET) are planning for access by all educators and students.
   - West Virginia Board of Education adopted Policy 2460--an acceptable use policy for all levels of access.
   - Self-nomination forms for installation readiness have been developed to assist schools in preparation for connections.
   - Applications have been developed for student and educator e-mail accounts.

- WVDE coordination with other Internet projects and training to ensure teachers have on-line access after training.

2. Instructional Technology Program
   - Review and revise learning objectives from the already developed "Master Plan" of curriculum.
   - Integrate technology across the curriculum and develop new instructional technology courses as needed.
3. West Virginia History Film Project
   - Utilize footage and still pictures from the project to develop a West Virginia History laser disc with bar codes and curriculum materials.
4. Review and adopt new projects and procedures as needed.

III. Technology infrastructure and state backbone expansion for equitable access.

A. Insure the technology is accessible by all learners.
B. Develop the infrastructure to be reached by all West Virginians.
C. Build partnerships and responsibilities for all components of the infrastructure.
D. Coordinate the transport media including delivery by phone lines, microwave, satellite, radio waves and cable.
E. Develop maintenance, repair, clearinghouse, and help desk structures.
F. Ensure affordable access rates for all educational entities and public libraries.
G. Provide assistive/adaptive technology as needed. (Attachment C)
   - Assistive technology devices include computers with adapted input and/or output, adapted toys, powered mobility devices, augmentative communication devices, special switches, and numerous commercially available or adaptable items to improve an individual's ability to learn and interact with others.
H. Open schools before and after regular day to allow more time for access.
   - Address time, staffing, transportation and liability issues.
   - Utilize West Virginia Public Broadcasting educational programs during this time. (Attachment D)
   - Coordinate technology utilization plan with community committee recommendations.

IV. Staff development and certification.

A. Implement the "West Virginia Technology Staff Development Model" developed by educators to include:
   1. Awareness--providing overviews of educational technology.
   2. Turnkey--providing in-depth, hands-on staff development and all of the hardware, courseware, and materials to integrate the technology into the learning environment.
B. Provide ongoing and follow-up technology and curriculum integration staff development sessions.
C. Propose changes in certification to ensure new teachers will be prepared to integrate technology.

D. Develop higher education teacher modeling methods for technology utilization and utilize them in preservice and inservice sessions.

V. Integration of technology use into curriculum and Education First Panel committees.

A. Provide adequate time and resources for the integration of technology.
B. Develop and distribute models of technology integration.
C. Demonstrate technology uses with community partnerships, staff development, curriculum standards, opportunity-to-learn standards, and school-to-work transitions.
D. Expand technology utilization in adult education.

VI. Ongoing assessment/evaluation/revision of technology plans and implementations.

A. Provide technical assistance to schools to develop a technology plan.
B. Assist with providing funding for plan implementation.
C. Use technology to implement assessment and evaluation or to compile data.
D. Review implementation plans; revise as needed.
E. Review and evaluate statewide projects and incorporate into local plans.
F. Evaluate repair, maintenance, clearinghouse, help desk and other procedures.

The technology bridges must be interwoven with educational improvements and reform to accomplish the state and national goals and to make a positive difference in student achievement and lifelong learning.

IMPLEMENTATION AND FUNDING

All of the technology plan components, objectives and tasks are important and necessary to deploy and employ technology for educational changes. The following activities address the recommended priority implementation tasks and are correlated to the previous outline.

	IMPLEMENTATION TASKS	Time Lines	Annual Expenditures
I	**Leadership and Organizational Structure**		
A	Support US Department of Education technology planning by participating in national technology meetings and sharing best practices, implementation plans, network knowledge, legislation, funding, staff development models and any other information to encourage the effective use of technology for lifelong learning.	ongoing	
B	--Joined CCSSO State Technology Representative Organization. --Participated in conference planning committee meeting. --Participate in conference meeting and provide presentations to share West Virginia's plan.	4/95 6/15/95 10/95 ongoing	4,000
C	--Joined SREB Technology Cooperative to take advantage of a 15-state technology buying cooperative. --WV Department of Education and Higher Education jointly participated in organizational meeting and prioritizing tasks. --Participate in accomplishing tasks for Co-op state services.	3/95 6/95 9/95	8,0
D	Establish a West Virginia Technology Coordinating Council: --Review the Distance Learning Coordinating Council legislation. Expand DLCC legislation to incorporate Diagram 5 concepts. --Report to the Legislative Oversight Commission on Educational Accountability.	9/95 2/96 annually	5,500

I	Leadership and Organizational Structure (continued)		
E	--Depending on the size of the county and the demonstrated need, establish a full- or half-time county technology coordinator to (1) meet with the state technology staff for technical assistance; (2) provide input to the WV Technology Coordinating Council; (3) develop county technology plans; (4) assist schools with development of school technology plan; (5) organize and conduct technology staff development; (6) oversee technology integration into curriculum through school teacher technology teams. --Change legislation and/or policy to allow the county technology coordinator to be funded at approximately $50,000 per position for all of the above tasks. (Because of the technology implementations since 1990, it has become imperative to have a county (or multi-county) technology coordinator. The above recommendation is a priority of the Task Force, but another option is to consider "Technology Specialists." The size of West Virginia allows state level implementation to be locally driven. Therefore, the technology specialists could be hired through the state level to ensure that counties and schools have the necessary technical assistance. Each specialist would be responsible for a determined number of schools based on enrollment (not county boundaries) and geographic locations. Other options will be explored through the legislative process to bring the needed assistance for technology implementation to the school level.)	ongoing 2/96	To be determined based on the number of county or multi-county coordinators approved
F	--Create teacher and student technology teams at the school level as part of the planning process and continuing instructional integration. Teacher teams should include system operators and library/media personnel. --Through a new curriculum, which could begin at the 3rd grade level, groups of students will become technology teams and a core of technology and network managers to troubleshoot systems and train teachers and other students.	9/95--ongoing beginning 1/96--ongoing	No additional cost 5,000 for pilots in 2 schools
G	--Involve parents, community, business and industry at all levels of instructional technology planning, implementation and integration. --In Diagram 5, the plan is for schools to have a local Technology Coordinating Council and involve all of the local stakeholders.	ongoing beginning 9/96	No additional cost

II	Technology Funding		
A	--Establish agency connections to maximize technology funds for coordinated use and joint legislative requests. --Through the coordinated efforts of the Technology Coordinating Council as described in Diagram 5, all agencies, consortia, business and industry will work together for maximizing utilization of technology funds.	ongoing beginning 9/96	See I, m D, ge 18
B	Develop legislative proposals as needed to improve instruction and teacher preparation through the use of technology.		
B 1	Establish district funding on a per pupil basis to assist in implementing the technology plans to improve instruction. The plans will include establishment of student and teacher school technology teams, staff development to integrate technology across curriculum areas, networking, telecommunications, repair and maintenance. Request legislative funding on a per pupil basis to be allocated for approved plans. Review of RESA Computer Repair Reports will help determine funding needs for statewide technology repair.	request 2/96 to implement beginning 9/96	To be deter-mined by legislative education com-mittees
B 2	Create a Technology Transfer Fund in cooperation with the Public Service Commission Consumer Advocate Office and legislative rules and policies.	2/96	No additional cost
C	Continue successful established technology initiatives to fulfill parts of the total technology plan.		
C 1	Basic Skills/Computer Education Program Continue this allocation through grade 12 for hardware, software, and training to implement the legislation and to provide technology to students as they progress through the grade levels.	annually	10 mil
C 2	West Virginia Microcomputer Educational Network (WVMEN) Continue the instructional toll-free, statewide bulletin board serving over 9,000 educational and community users.	annually	150,000
C 3	West Virginia Education Information System (WVEIS) To continue the statewide administrative system with funds for hardware, software, support and personnel.	annually	2.85 mil
C 4	Curriculum Technology Resource Center (CTRC) Continue funding for the legislation that provides technology materials selected by teachers for teachers. Restore to the initial funding level of $500,000.	annually	500,000

II	Technology Funding (continued)		
C 5	Technology Demonstration Projects Allow individual school creativity and innovation by continuing funding for technology demonstration sites. Approximately 10 sites are awarded each year on a competitive application basis.	annually	250,000
C 6	Distance Learning Continue and enhance the West Virginia Department of Education and the Educational Broadcasting Authority partnership for providing distance learning opportunities in the schools and libraries.	annually	250,000
C 7	Bridging the Gap Distance Learning Program Add two more remote sites. Provide technical assistance and support for all sites.	2/96 ongoing	15,000
C 8	JTPA Technology Education Labs Explore ways to continue the technology education pilot labs for all technology education curriculum sites.	2/96	Depends on number of remainig sites
C 9	Microsoft Partnership Continue support of placing multimedia software into classrooms by providing WVDE staff for training.	ongoing	No additional cost
C 10	Bell Atlantic World School Project Continue the partnership with Bell Atlantic to upgrade the WVEIS system and connect schools in the Bell Atlantic territory to the Internet.	5/94-- 12/97	8--11 mil from Bell Atlantic
D	Fund new and coordinated programs to complete the plan components.		
D 1	Internet Access for All West Virginia Schools --Develop detailed coordination for the K-12 access services between WVDE and WVNET by adding WVDE instructional personnel to WVNET Advisory Board. --Provide turnkey staff development for Internet access and use for teachers to integrate the access into curriculum and improve student achievement. --Schedule planning meetings with WVDE, WVNET, IS&C and other telecommunications, satellite and cable companies to determine how **all** schools will be provided access. --Continue coordination meetings with WVNET and IS&C to ensure the state telecommunications backbone plans address K-12 access.	8/95 6/95 and ongoing 6/95 and ongoing 6/95 and ongoing	0 800,000 0 0

II	**Technology Funding (continued)**		
D 1	Internet Access for All West Virginia Schools (continued) --Educate all county school systems about taking advantage of the state telecommunications contracts for lower phone charges. --Assist schools with the turnkey solution of having the technology in place when teachers return from training. This would include funding for some of other "last mile" expenses including LANs and workstations. --Continue the technical partnership between WVDE and WVNET in operating the mail server for K-12 Internet IDs, assisting with policy and procedure development, technical assistance, software maintenance and help desk items. --Coordinating WVNET's federal connections grant to place high speed modems in higher education sites to allow for K-12 access when necessary. --Continue technical coordination with the Library Commission InfoMine federal grant project which will place at least one Internet access unit in each school district. --Assist school districts in implementing the Appalachian Rural Systemic Initiative with telecommunications and Internet connections to accelerate student achievement in science, math and technology.	ongoing 6/95 ongoing ongoing ongoing upcoming	0 2.2 mil 46,000 via federal grant via federal grant anticipated federal grant
D 2	Curriculum Integration with Instructional Technology Develop new instructional technology courses for student electives and update the learning objectives in all curriculum areas to include the use of instructional technology.	2/96	5,000
D 3	West Virginia History Film Project Develop West Virginia laserdisc to enhance the film and promote accomplishments for economic development.	9/96	10,000
III	**Technology Infrastructure and State Backbone for Equitable Access**		
A & B	West Virginia has a telecommunications backbone in place and expansion is ongoing; equitable access must be considered. This will be accomplished through the Technology Coordinating Council (see Diagram 5) and the following agencies and entities: --Information Systems & Communications (IS&C), the state agency responsible for statewide backbone --WVNET, part of the statewide backbone and specifically serves higher education, K-12 and vocational education. --Telecommunications companies and partnership programs.	ongoing	To be determined as these partnerships are built

III	Technology Infrastructure and State Backbone for Equitable Access (continued)		
C & D	--WVNET, part of the statewide backbone and specifically serves higher education, K-12 and vocational education. --Telecommunications companies and partnership programs. Build partnerships and coordinate the transport media through the Technology Coordinating Council entities listed in III, A & B, and: --Met with higher education ad hoc technology planning committee and shared information and feedback from the Technology Task Force. --Integrate this plan with the technology components of the 2/95 higher education legislation. --Once the new Vice Chancellor of Instructional Technology is selected, coordinate K-12 and higher education plans to be seamless for the students and systems. --Work with the Public Service Commission Consumer Advocate and representatives of all transport media (telephone, satellite, microwave, radio, cable, etc.) to coordinate the best affordable avenue for educational access. --Have representation on the Public Service Commission Cable Task Force. --Add WVDE K-12 representation to WVNET board since WVDE is now served by WVNET and will be a location to issue WVNET accounts and help desk. --Build partnerships through the Rural Development Council Teletechnology teleconference planning and production. --Explain the plan to the State Chamber of Commerce Education Committee and invite business participation.	5/95 9/95 11/95 ongoing ongoing 8/95 9/95 4/95--10/95 9/1/95	0 0 ARC funds 0
E	Develop maintenance, repair, clearinghouse, and help desk structures. --Maintenance and repair has always been a concern and was adequately addressed in 1982 for public schools. Each Regional Educational Service Agency (RESA) was provided initial funding for a RESA computer technician when the WVMEN system was implemented. Now the technicians are also responsible for additional state and local program repair including such projects as the Basic Skills/Computer Education program, the WVEIS administrative system, and the oncoming World School/Internet connections. The number of technicians have grown in the RESAs, but not at the rate of implementation. Develop adequate funding and/or change of operational structure for better service to schools.	ongoing	Review legislative financial reports to determine appropriate funding rate est. 500,000

III	**Technology Infrastructure and State Backbone for Equitable Access (continued)**		
E	Develop maintenance, repair, clearinghouse, and help desk structures. (continued) --Clearinghouse and help desk structures have been discussed and are in the process of being developed with WVNET, NASA, and WVDE.	5/95	See II, D1
F	Ensure affordable access rates for all educational entities and public libraries. --Work with the Public Service Commission and US Congress. --Task Force member testified for US Senate Committee regarding classroom access and affordable rates. --Implement the InfoMine Library Access Program which will provide Internet access to public libraries and 55 secondary public schools. Implementation is in the process.	ongoing 5/95 4/95--1/98	Federal grant funds
G	Provide assistive/adaptive technology as determined by need in accordance with IDEA guidelines.	ongoing	Depends on IEP
H	Open schools before and after regular day to allow more time for access. --Address time, staffing, transportation and liability issues with Legislature and West Virginia Board of Education. --Coordinate West Virginia Public Broadcasting educational programs for use during this time especially Ready to Learn. --Coordinate technology plan with community committee recommendations to serve students and community and specifically address adult education issues. (Attachment E)	2/96 2/96 2/96	To be determined with legislation
IV	**Staff Development and Certification**		
A & B	Implement the "West Virginia Technology Staff Development Model" including awareness and turnkey solution sessions for all instructional technology implementations.	ongoing	Listed in Section II
C & D	Propose changes to certification and develop higher education teacher modeling methods for technology utilization. --Provide recommendations to higher education ad hoc committee for incorporation into higher education plan. --Coordinate the needed changes with the new Vice-Chancellor of Instructional Technology and Deans of institutions. --Present recommended changes to legislative committees.	5/95--12/95 11/95 2/96	To be determined with legislation

V	**Integration of Technology into Curriculum and Panel Committee Recommendations**		
A	Provide adequate time and resources for the integration of technology. --Explore the use of time in "Prisoners of Time" report. --Assist with local school planning to incorporate technology integration. --Re-evaluate resources and shift local funding.	 6/95--ongoing ongoing	To be determined
B	Develop and distribute models of technology integration. --The NSF Coordinated and Thematic Science program (CATS) now being implemented in the state has a strong technology integration component which can be used as a model for other areas. --Internet Home Pages are being developed to disseminate information. --The CTRC turnkey staff development model has been distributed nationwide through the Pioneer partnership and other national legislative meetings. --Collaborate with NASA and AEL to incorporate best practices and resources.	 4/95 ongoing ongoing 1993-94 8/95 ongoing	NSF funded No additional cost
C	Develop technology uses with community partnerships, staff development, curriculum standards, opportunity-to-learn standards, school-to-work transitions and economic development.	beginning 4/95	To be determined
VI	**Assessment/Evaluation/Revision of Plan**		
A & B	Provide technical assistance and funding for school technology plans which will include assessment, evaluation and a revision process. --Sessions at Leaders of Learning State Conference --Technology Planning Meeting	ongoing 7/31/95 8/10/95	See II, B1
C	Utilize technology to assess, evaluate and compile data.	ongoing	See II, B1
D	Review and revise plans as needed. --Incorporate school technology planning with the state/county/school unified plan to minimize paperwork and duplication of effort. --With WVCUE, WVDE and Bell Atlantic sponsorship, plan a technology conference to provide technical assistance for local planning. --Incorporate Economic Development Council plan to provide information about technology implementations to communities.	ongoing 9/96--12/96 10/12/96 ongoing	No additional cost

VI	Assessment/Evaluation/Revision of Plan (continued)		
E	Evaluate statewide projects and incorporate into local plans. --The recommendations from this Technology Task Force plan were presented to the public at eight regional meetings covering the entire state. The feedback was overwhelmingly supportive of the issues presented in the draft plan.	ongoing	Depends on project
F	Evaluate repair, maintenance, clearinghouse and help desk services.	9/95--ongoing	See III, E

EVALUATION

Attached is a schema for evaluating the West Virginia Educational Technology Plan. The schema is provided by the Appalachia Educational Lab and is based on the "key results" that the plan is intended to address. The key results (presented at the bottom of the schema) are taken from this technology plan and from the Educate America Act, Section 3.17. The Technology Task Force that assisted staff in the preparation of this technology plan believes that these key results are both necessary and sufficient for judging the value and impact of the State's proposed efforts.

The schema is based on several assumptions:

1. It is the State's intention to use the schema as a basis for identifying a third-party evaluator that produces objective, data-based information about how the State is doing in the pursuit of the key results.
2. The evaluator will collect both qualitative and quantitative data to assess the extent to which the key results are achieved.
3. The evaluator will use technology whenever possible to gather, synthesize, and report data used in this evaluation.
4. While the focus of the evaluation will be on the achievement of the key results, the evaluation data collected will serve to inform both formative and summative decisions that technology officials make to implement the plan.

The schema (page 26) presents a conceptualization for the third-party evaluation. The schema includes a vertically arranged set of cells for each of the key results. The number of cells for each of the key results will be negotiated between the West Virginia Department of Education and the third-party evaluator. Each cell specifies an "indicator" and "data sources." Indicators are the signs the contractor is willing to accept as evidence that a key result is or is not being achieved. Data sources are the people, events, documents, and so forth that the evaluator will draw upon to develop information about the status of an indicator. The schema includes five completed cells for illustration purposes. The actual content of the cells will be determined through negotiation with the third-party evaluator.

Using this conceptualization, the third-party evaluator will provide quarterly updates to the West Virginia Department of Education and a formal annual report on the progress being achieved in each of the key results areas. Technology staff will use the updates provided by the third-party evaluator as formative input to help them fine-tune the implementation of the plan. Technology staff will use the annual reports of the third-party evaluator as benchmarks for assessing the extent to which the implementation of the plan is resulting in the achievement of the key results.

EVALUATION SCHEMA FOR THE WEST VIRGINIA EDUCATION TECHNOLOGY PLAN

KEY RESULTS							
Plan Obj #1	Plan Obj #2	Plan Obj #3	Plan Obj #4	Act #1	Act #2	Act #3	Act #4
Indicator: Level of Use **Data Sources:** Students, Parents, Teachers	**Indicator:** Perceived Importance/ Essentiality for Teaching/ Learning **Data Sources:** Teachers	**Indicator:** **Data Sources:**	**Indicator:** Success Stories **Data Sources:** Students, Parents, Teachers	**Indicator:** **Data Sources:**	**Indicator:** **Data Sources:**	**Indicator:** **Data Sources:**	**Indicator:** Level of Use **Data Sources:** Parents, Community Members
Indicator: User's Comfort Level **Data Sources:** Students, Parents, Teachers	**Indicator:** **Data Sources:**	**Indicator:** **Data Sources:**	**Indicator:** **Data Sources:**	**Indicator:** **Data Sources:**	**Indicator:** **Data Sources:**	**Indicator:** **Data Sources:**	**Indicator:** **Data Sources:**
Plan #1: Effective utilization of basic technology production tools. Plan #2: Effective utilization of appropriate software and courseware to meet instructional and administrative goals and objectives. Plan #3: Effective utilization of methods of learning through instructional technology equipment and assistive devices. Plan #4: Effective utilization of information access and knowledge navigation technology.				Act #1: Promotion of higher student achievement through the use of technology in education. Act #2: participation of all schools and districts in the State, especially those with a high percentage or number of disadvantaged students. Act #3: Development and implementation of cost-effective, high-speed, statewide, interoperable, wide area communication technology support system for schools, especially rural schools. Act #4: Promotion of shared usage of equipment, facilities, and other technology resources by adult learners during after-school hours.			

STATE AND NATIONAL EDUCATION GOALS

By the Year 2000...

School Readiness - All children in America will start school ready to learn.

School Completion - The high school graduation rate will increase to at least 90 percent.

Student Achievement and Citizenship - All students will leave grades 4, 8, and 12 having demonstrated competency over challenging subject matter including English, mathematics, science, foreign languages, civics and government, economics, arts, history, and geography, and every school in America will ensure that all students learn to use their minds well so they may be prepared for responsible citizenship, further learning, and productive employment in our nation's modern economy.

Mathematics and Science - United States students will be the first in the world in mathematics and science achievement.

Adult Literacy and Lifelong Learning - Every adult American will be literate and will possess the knowledge and skills necessary to compete in a global economy and exercise the rights and responsibilities of citizenship.

Safe, Disciplined, and Alcohol-and Drug-Free Schools - Every school in the United States will be free of drugs, violence, and the unauthorized presence of firearms and alcohol and will offer a disciplined environment conducive to learning.

Teacher Education and Professional Development - The nation's teaching force will have access to programs for the continued improvement of their professional skills and the opportunity to acquire the knowledge and skills needed to instruct and prepare all American students for the next century.

Parental Participation - Every school will promote partnerships that will increase parental involvement and participation in promoting the social, emotional, and academic growth of children.

K-5	6-8	9-10	11-12	POSTSECONDARY
• Core Competencies • Personal/Life Skills • Higher OrderThinking Skills • Evaluation/Assessment • Teach/Reteach • Responsible Students • Career Awareness • Computer Literacy	• Core Competencies • Personal/Life Skills • Higher Order Thinking Skills • Evaluation/Assessment • Teach/Reteach • Responsible Students • Career Exploration • Career Assessment • Computer Literacy • Career Cluster Designation: *•Health/Human Services* *•Business/Marketing* *•Science/Natural Resources* *•Engineering/Technical* *•Fine Arts/Humanities* • 2-Year Educational Plan Development	• Core Competencies • Personal/Life Skills • Higher Order Thinking Skills • Evaluation/Assessment • Teach/Reteach • Responsible Students • High Schools That Work • In-Depth Career Exploration • Career & Academic Decision Making • Applied Academics • Integrated Curriculum • Core Employability skills • Career Major Designation • Educational Pathway Designation: • *College Prep* • *Tech Prep Associate Degree* • *Technical Certificate* • Educational Plan Revision (Additional 3 years)	• Core Competencies • Personal/Life Skills • Higher OrderThinking Skills • Evaluation/Assessment • Teach/Reteach • Responsible Students • High Schools That Work • Career & Academic Decision Making • Career Preparation *•Academic* *•Technical* • Applied Academics • Integrated Curriculum • Career Major Designation • Update Education Plan • Advanced Employability Skills • Certificate of Proficiency & Warranty • Skill Certificate •TPAD •Technical Certificate	• 4-Year College • 2-Year College • Technical School • Apprenticeship • Military • Work
SCHOOL-BASED LEARNING				
CONNECTING ACTIVITIES — Technical Assistance, Staff Development, Curriculum Development, Partnerships, Student Placement, One-Stop Shop, Technology, Drop-out Recruit, Student Follow-up, Community Involvement				
WORK-BASED LEARNING				
• Tours/Field Trips • Resource Persons	• Job Shadowing • Community Service • Tours/Field Trips • Resource Persons	• Mentoring • Internships • Job Shadowing • Community Service • Tours/Field Trips • Resource Persons	• Cooperative Education • Registered Youth Apprenticeship • Entrepreneurship • Internship • Clinical Experience • Mentorship • Rotation Through Industry • School-Based Enterprise	• Apprenticeship • Cooperative Education • Internship • Entrepreneurship • Clinical Experience • Mentorship • School-Based Enterprise
K-5	6-8	9-10	11-12	POSTSECONDARY

RESULTS

- High School Diploma
- Certificate of Proficiency & Warranty
- Industry Validated Skill Certificate
- Postsecondary Degree or Certificate
- Quality Job Options
- Life-Long Learning Opportunities

→→*PROGRESSION TO MORE ADVANCED LEVELS*→→

Attachment B

ASSISTIVE & ADAPTIVE TECHNOLOGY

The following information related to assistive and adaptive technology is to better describe plan component III, G on page 15.

III. G. Provide assistive/adaptive technology as needed.

1. The use of assistive technology provides children with disabilities the opportunity to participate more fully in all aspects of life at home and school.
2. Assistive technology devices include computers with adapted input and/or output, adapted toys, powered mobility devices, augmentative communication devices, special switches, and numerous commercially available or adaptable items to improve an individual's ability to learn and interact with others.
3. The Individuals with Disabilities Education Act (IDEA) defines assistive technology device as "any item, piece of equipment, or product system, whether acquired commercially or off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of children with disabilities."
4. Federal regulations in the IDEA include provisions addressing assistive technology for students with disabilities in the public school system. Individual student needs for assistive technology devices and services must be determined by a team of professionals and parents as part of the student's Individualized Education Program (IEP) and may be provided as special education, a related service or supplemental aid or service for children in the regular classroom.
5. Assistive technology is an enabling tool that provides access to learning. It is most effective when applied in combination with traditional teaching techniques and strategies to achieve the best learning environment for children with disabilities.
6. Assistive technology can facilitate participation by students with disabilities in the educational curriculum and assist in the acquisition of the social skills needed for a productive and positive education.
7. Single switches, alternate keyboards, and keyguards are a few of the modifications a student may use to input information.
8. Computer output may include voice output as well as visual display.
9. Special software can make the computer a very effective learning tool for students with learning disabilities or cognitive deficits. A desktop computer equipped with a standard word processing program can be used as an assistive device by learning disabled students to write, check grammar and spelling. A calculator may be an accommodation used by a student with a disability who is unable to remember math facts.

10. Although specific assistive technology devices and services for students with disabilities are determined by the IEP committee and delineated on the student's IEP, the following issues should be considered by schools when developing a technology program for all students:
    a. Consult with individuals who have expertise in assistive technology when developing plans for school or county technology programs.
    b. Ensure that computers are adaptable and all students have access to equipment.
    c. Include special educators in technology training opportunities.
    d. Increase awareness of assistive technology for all educators by including general information in training initiatives.
    e. Consider needs of students with disabilities when furniture and other equipment are purchased.
    f. Implement curricular modifications for students with disabilities when appropriate.
11. The West Virginia Department of Education participants in several interagency initiatives including the annual "Partnerships in Assistive Technologies" (PATHS) State Conference, the West Virginia Assistive Technology System (WVATS), and the Interagency Funding Task Force on Augmentative Communication Devices. Representation on the task force includes: the West Virginia Department of Education, The West Virginia Division of Rehabilitation Services, The Office of Medicaid, the Office of Maternal and Child Health, Early Intervention Program, and Handicapped Children's Services. Additional information regarding the delivery of assistive technology services to students in West Virginia is available through the West Virginia Department of Education, Office of Special Education Programs and Assurances.

Attachment D

WEST VIRGINIA PUBLIC BROADCASTING

The following is more detailed information about public broadcasting programs.

Instructional Television:

Television programs produced and broadcast specifically for classroom use. These are accompanied by print material with recommendations related to utilization activities. Programs range from primary to secondary level.

Mathline:

The PBS professional development course for middle school math teachers consisting of online conferences, video lessons and teleconferences during the year-long course.

Ready To Learn:

Community outreach, print and workshop components teach child care providers, including parents, how to use children's programming so that all children will be ready to learn by the time they enter school.

PBS ONLINE:

PBS ONLINE is an Internet Web site for public television which highlights public television's wide variety of programming. PBS ONLINE includes an extensive area supporting the Adult Learning Service with a complete roster of telecourses and other resources.

Attachment E

ADULT BASIC EDUCATION

The following information relates to Adult Basic Education listed in III, H and throughout the technology plan.

The needs of Adult Basic Education (ABE) students have become more complex. One of the immediate needs is in the area of technology. It is important for adults to become familiar with the use of technology. As their children's knowledge of technology increases, it is necessary for adults to have the same understanding. Technology will also affect adult lives through everyday activities including ATM machines, grocery shopping, etc.

ABE recognizes that partnerships must be made with principals and teachers to accomplish the necessary training for adult students. To begin to build these connections, the following will be implemented:

1. Distribution of a computer survey to determine needs in the areas of training, hardware and software.

2. Development of staff training module for adult education students.

3. Field testing to identify appropriate software for adult learners.

4. Purchase necessary on-site and portable equipment and curriculum software.

5. Evaluate, assess and change training and implementation components as needed.