MINUTES

MONTANA HOUSE OF REPRESENTATIVES
52nd LEGISLATURE - REGULAR SESSION

COMMITTEE ON EDUCATION & CULTURAL RESOURCES

Call to Order: By Chairman Ted Schye, on January 16, 1991, at 3:00 P.M.

ROLL CALL

Members Present:

Ted Schye, Chair (D)
Ervin Davis, Vice-Chair (D)
Steve Benedict (R)
Ernest Bergsagel (R)
Robert Clark (R)
Vicki Cocchiarella (D)
Fred "Fritz" Daily (D)
Alvin Ellis, Jr. (R)
Gary Feland (R)
Gary Forrester (D)
H.S. "Sonny" Hanson (R)
Dan Harrington (D)
Tom Kilpatrick (D)
Bea McCarthy (D)
Scott McCulloch (D)
Richard Simpkins (R)
Barry "Spook" Stang (D)
Norm Wallin (R)
Diana Wyatt (D)

Members Excused: Floyd "Bob" Gervais (D)

Staff Present: Andrea Merrill, Legislative Council
Dianne McKittrick, Committee Secretary

Please Note: These are summary minutes. Testimony and discussion are paraphrased and condensed.

HEARING ON HB 116

Presentation and Opening Statement by Sponsor:

REPRESENTATIVE DOROTHY CODY, House District 20, Wolf Point and Poplar, said HB 116 is an Administrative Code Committee bill. HB 116 is not an anti-gifted and talented student bill and in no way affects existing funding of the gifted and talented programs already in place in the state's public schools. **REP. CODY** stated that the issue is that the Board of Public Education did not have

statutory authority to mandate gifted and talented rules and programs in schools. The statute is very clear and reads that school districts "may" have gifted and talented programs, not "shall". The Code Committee informed the Board by letter to then Chair Alan Nicholson on June 27, 1989 that it did not have statutory authority to adopt the rule mandating gifted and talented programs. **REP. CODY** said Attorney General Marc Racicot has now answered the question on statutory authority and concluded that the Board of Public Education's rule requiring every school district to make an identifiable effort to provide educational services to gifted and talented pupils conflicts with the law.

Proponents' Testimony:

REP. MARY LOU PETERSON, Member, Administrative Code Committee, said emotional response should not influence HB 116 in dealing with the gifted and talented program language. The Administrative Code Committee is the "watchdog" to insure all agencies do what legislators decide is proper procedure. The agencies can implement rules and regulations only according to the laws passed by the Legislature.

Opponents' Testimony:

Alan Nicholson, Member, Board of Public Education, said the Board of Public Education five years ago asked its attorney at the time, John Maynard, to give the Board an opinion on whether the language of the statute, which has not changed since that time, conflicted with the language of the gifted and talented rule. At that time the gifted and talented rule was recommended, not required. **EXHIBIT 1** Mr. Maynard gave an opinion to the Board saying the language of the statute and the language of the Board's rule did not conflict. The Board then voted to remove the rule and hear it again in review under Project Excellence. The Board did propose a gifted and talented rule under Project Excellence and the testimony for the rule was overwhelmingly in favor of the gifted and talented program; thus, the Board promulgated the rule with the understanding there would be a potential conflict with the Legislature. However, **Mr. Nicholson** stressed the Board also understood it had an attorney's opinion that the rule and statute were not necessarily in conflict. The official ruling from the Attorney General's Office now is that the construction of the language in the rule and the construction of the statute do in fact conflict and that the Legislature prevails. The Attorney General did not however, at this time address the constitutional authority of the Board. It is not yet clear whether said authority lies with the Board or the Legislature. The Board now believes the Attorney General's ruling, until challenged, has effectively stopped the rule and action by the Legislature. The Board could now ask the court to clarify its constitutional responsibilities and powers. **Mr. Nicholson** said he did not know which route the Board would take at this time. He said the Board acted in good faith as a citizen

Board, taking the testimony of the citizens around the state and continues to believe this rule is in the best interests of the kids in Montana.

Eric Feaver, Montana Education Association, (MEA), said HB 116 does have an impact on gifted and talented programs in spite of what Rep. Cody may believe. It will make gifted and talented programs permissive everywhere in the state. He stressed the bill is an "anti" gifted and talented proposal since it should be a mandated program in all public schools. HB 116 is precisely why the Legislature has not involved itself in legislating curriculum and that in this singular incidence has done so. This Legislature need do nothing since the Attorney General has already ruled as Alan Nicholson testified.

Larry Fasbender, Montana Association of Gifted and Talented Education, said there is conflict between what the Legislature has authority to do and what the Board of Public Education has authority to do. The constitutional question as to who has authority will likely be answered when a suit is brought. Later this session the Legislature will have the opportunity to answer the very important question as to whether gifted and talented should in fact be funded. The major problem may be one of perception in that if you support HB 116 it might be assumed you oppose gifted and talented programs. In closing he said the question as to who has the authority to set the standards - the Legislature or the Board of Public Education - will have to be decided in some fashion, hopefully not at the expense of gifted and talented education.

Jesse Long, Executive Director, School Administrators of Montana, (SAM), said it is unfortunate that the gifted and talented program has to be the vehicle sending the message on administrative rules to various agencies who make administrative rules. SAM is definitely in favor of gifted and talented programs and wants to promulgate as many as possible across the state.

Dori Nielson, Office of Public Instruction, (OPI), said OPI supports gifted and talented education as has been reflected by requests for appropriation. OPI has no interest in being involved in conflict between agencies. In support of gifted and talented education, OPI feels there may be another resolution to the conflict. Rather than revoke the Board of Public Education rule, perhaps the statute could be revised.

Terry Minow, Montana Federation of Teachers, (MFT), said the MFT opposes any legislation that might negatively affect gifted and talented programs.

Questions From Committee Members:

REP. SIMPKINS asked **Alan Nicholson** if the law was known to the Board of Public Education at the time these rules were developed.

Mr. Nicholson answered yes. **REP. SIMPKINS** then asked **Mr. Nicholson** to clarify if the Board still believes that it has constitutional authority over the Legislature, being above legislative law. **Mr. Nicholson** responded using notes from a policy adopted by the Board of Public Education that outlines the authority and responsibility of the Board. The Board exercises general supervision over the public school system and other public education institutions as assigned by law. Other duties of the Board shall be provided by law. That is the constitution. The key words are "exercising general supervision", which the Board's attorney feels is a self-executing constitutional power. While the Legislature can make rules to effectuate and implement that power, it cannot make rules or statutes to obviate it.

Closing by Sponsor:

REP. CODY challenged the opponents of HB 116 to find any indication in the legislation that it is an anti-gifted and talented bill. It is not. The Board of Public Education has had ample opportunity to change the rule. If the Legislature does nothing concerning this issue, it will set precedence and send the message to all other agencies they can enact any rule they wish. In conclusion, she urged a **DO PASS** on HB 116.

HEARING ON HB 30

Presentation and Opening Statement by Sponsor:

REPRESENTATIVE RAY PECK, House District 15, Havre, said the purpose of HB 30 is to establish the Montana Telecommunications Network and is based on the premise that telecommunications have great potential in improving educational instruction throughout the state. The bill will bring together the private sector, Department of Administration, Superintendent of Public Instruction, University System, Vo-tech Centers, Community Colleges, and has the potential to include private and tribal colleges. One of the most important aspects of HB 30 is that telecommunications can contribute to the equal educational opportunity for all Montanans. With the argument between big schools and small schools, it can be one possible vehicle to aid in a solution to that equity problem.

Proponents' Testimony:

Tony Herbert, Assistant Administrator of Information Services Division, Department of Administration, said the exhibit showing the four types of systems that may be deployed would be a visual aid in explaining the various technologies. **EXHIBIT 6**

Wayne Buchanan, Executive Secretary, State Board of Public Education, said HB 30 will be one of the most important bills to face the Education Committee this session. The new accreditation standards make provisions for alternate standards and the Board

hopes Montana schools will take advantage of distance learning. The Board believes school districts can much more effectively and economically meet the accreditation standards through distance learning. The Montana Constitution guarantees equality of educational opportunity to all students and distance learning has the potential to bring this promise to the state's rural and small schools.

Jan Wright, Legislative Intern Representing the Montana Education Association, (MEA), stood in support of HB 30 and presented written testimony. **EXHIBIT 7**

Patrick Hogan, Telecommunications Resources, Inc., stood in support of HB 30 and presented written testimony. **EXHIBIT 8**

Loran Frazier, School Administrators of Montana, (SAM), stood in support of HB 30 and presented written testimony. **EXHIBIT 9**

Terry Minow, Montana Federation of Teachers, (MFT), said Montana must take advantage of whatever technology is available to overcome limitations and build on its many strengths. Telecommunications will be another valuable tool in a good teacher's bag of tricks.

Kay McKenna, Montana Association of County School Superintendents, (MACSS), said she represents all the little "nooks and crannies" that need and could benefit from telecommunications.

Dan Walker, U.S. West Communications, voiced support for HB 30 and presented written testimony. **EXHIBIT 10**

Richard Miller, Montana State Librarian, urged support for HB 30 and presented written testimony. **EXHIBIT 11**

Bruce Moerer, Montana School Boards Association, (MSBA), said Montana's children cannot afford to be left behind when considering the advances in education and technology. HB 30 provides a definite tool in helping to equalize opportunity.

Earl Owens, General Manager, Blackfoot Telephone Cooperative, said Blackfoot Telephone sees a direct link between the long term viability of the local school and the long term viability and prosperity of the rural community. He agrees with a Time Magazine statement saying telecommunications will be as important to rural American communities in the next century as railroads were in the past. Blackfoot Telephone is enthused about distance learning and is committed, along with most of the other rural telephone companies in Montana, to providing the infrastructure that will enable rural Montana to be a part of the success and prosperity of our country in the future.

Joan Mandeville, Director of Industry Affairs for the Montana Telephone Association, said there is no doubt that to be

successful in economic development, it is essential to first look at quality education. Quality education is integrally tied to the future of some of Montana's rural cities and towns. Distance learning has been a dream come true for many of these schools. The association would like language added to the bill making it very clear that the Office of Public Instruction has the role as the lead agency for this project in Montana.

Nick Murnion, Vice-President of the Board, Mid-Rivers Telephone, Circle, and County Attorney at Jordan, said Mid-Rivers Telephone made the commitment two years ago to support the concept of distance learning in rural development. He requested that as the network is proposed the developers and planners keep the Mid-Rivers facilities in mind so they can be an active participant in providing a cost effective service. He also said Mid-Rivers sees the future as being fiber optics.

REP. BETTY LOU KASTEN said there are people in rural Montana, such as are served by Mid-Rivers Telephone, who have put their money where their mouth is, forged ahead, and implemented the use of fiber optics. Everything should be done to ensure that these facilities are not bypassed. She stressed emphatically that the blueprint at this point does not take into account Mid-Rivers. The people in her area have taken the first step, having allowed the co-op to put the money up in hopes the facilities already established will not only benefit the schools, but also hospitals, libraries, and many other services now lacking in rural Montana.

Opponents' Testimony: None

Informational Testimony:

Nancy Keenan, State Superintendent of Public Instruction, said the entire process began out of HJR 58 in 1987. The need was great to find out what was out there in terms of telephone lines, satellite, microwave, what capacity was available, and where to go from that point. A needs assessment was done, and Lambda Communications was hired in 1989. From this point it was determined that Montana needed an affordable system both geographically and equally assessable, specialized training, teacher in-service training and that there would be public and private participation. From the assessment, a blue-print was developed. **Supt. Keenan** stressed it is critical to understand this is **not** a plan cast in cement - things are changing hourly. The plan has been presented four times to the Interim Oversight Committee On School Funding Implementation and final a report was presented to the state from the Lambda Corporation. **Supt. Keenan** showed a video produced by the Office of Public Instruction overviewing distance learning in Montana. **EXHIBITS 2,3,4,5**

John Hutchinson, Director of Higher Education, said all systems of higher education including the Montana University System, Vocational- Technical Centers, and Community Colleges,

wholeheartedly endorse HB 30. Distance learning by telecommunications can help provide career-long instruction and education to underserved areas. It is the responsibility of higher education to assist the information-poor sectors of Montana. Institutions of higher learning should cultivate richer relationships with communities, businesses and industries that are located miles away from the campus.

Dr. Hutchinson suggested an amendment to the bill concerning language that higher education collect the equivalent of $1 for every student enrolled. Initially, it may not be necessary to collect the entire $1 and they would like to amend to collect up to $1. At a later date, it may be necessary to collect the full $1.

Bob Marks, Director, Department of Administration, said he was involved in the planning and formation of this program when he was in the Legislature. HB 30 will enhance education particularly in areas where it is impossible to find the instructors at the price they are able to pay for the small classes. The Department of Administration served as technical staff to the Office of Public Instruction and to higher education and contracted with Lambda Communications to do the needs assessment. Lambda Communications had a great deal of experience which is demonstrated in the product. The Governor's Office supports this legislation and believes it an appropriate beginning to this needed capability. He encouraged the committee to support this landmark legislation.

Questions From Committee Members:

REP. BENEDICT questioned **Supt. Keenan** concerning user fees as shown in the catalogs of learning programs distributed by OPI. Are user fees discussed in the funding proposals or will technology be given to the schools and then the schools will have to fund the programs? **Supt. Keenan** replied that there is a fee to buy courses. It becomes a local district effort to come up with the fee to buy the courses as they see ones they need. Even though it seems costly for a class, keep in mind that textbook producers are saying within ten years they will not be producing textbooks as we know them. Instead of schools purchasing say for example, science books, the money would be used for these programs. **REP. BENEDICT** asked **Supt. Keenan** if it is assumed that all schools have the ability to use the systems or will the state have to provide funding to those schools for equipment to use the system. Do we risk not equalizing the learning opportunities for those schools? **Supt. Keenan** replied that OPI serves as the bidding agent in obtaining equipment for the schools at a very reasonable cost and would assist all schools in this endeavor.

REP. WALLIN asked **Supt. Keenan** to explain the program Saco School uses and asked if it is similar to the program being proposed. **Supt. Keenan** replied that some superintendents, because of their isolation, have become involved earlier in telecommunications and

long distance learning. The Saco School has been nationally recognized for its efforts, which in part results from their not having access to courses.

REP. FORRESTER asked **REP. PECK** if the Appropriations Committee is aware of the financial implications of this bill since once it gets started there appears to be no end. Does Appropriations commit itself to seeing the program through? **REP. PECK** replied that is true of any program when it is started initially. Downstream costs are difficult to calculate. The Appropriations Committee has not acted on HB 30 and is not yet committed to it. He stressed it is a two-year commitment and one Legislature cannot bind a succeeding Legislature.

REP. WALLIN asked **Supt. Keenan** what happens if a student misses a very integral point necessary to the process of the class? Is he/she lost forever? **Supt. Keenan** answered this is probably more safeguarded than a teacher standing in the room because the information is stored and recorded. The video is on a disk which can be plugged back in to watch repeatedly.

CHAIRMAN SCHYE announced the war in the Persian Gulf had begun and the committee would adjourn for the day. Discussion on HB 30 would be continued on a date to be decided and all interested parties would be contacted as to date and time.

ADJOURNMENT

Adjournment: 5:15 P.M.

TED SCHYE, Chair

DIANNE MCKITTRICK, Secretary

TS/dMcK

HOUSE OF REPRESENTATIVES

EDUCATION AND CULTURAL RESOURCES COMMITTEE

ROLL CALL DATE 1-16-91

NAME	PRESENT	ABSENT	EXCUSED
REP. TED SCHYE, CHAIRMAN	✓		
REP. ERVIN DAVIS, VICE-CHAIRMAN	✓		
REP. STEVE BENEDICT	✓		
REP. ERNEST BERGSAGEL	✓		
REP. ROBERT CLARK	✓		
REP. VICKI COCCHIARELLA	✓		
REP. FRED "FRITZ" DAILY	✓		
REP. ALVIN ELLIS, JR.	✓		
REP. GARY FELAND	✓		
REP. GARY FORRESTER	✓		
REP. FLOYD "BOB" GERVAIS		✓	✓
REP. H.S. "SONNY" HANSON	✓		
REP. DAN HARRINGTON	✓		
REP. TOM KILPATRICK	✓		
REP. BEA MCCARTHY	✓		
REP. SCOTT MCCULLOCH	✓		
REP. RICHARD SIMPKINS	✓		
REP. BARRY "SPOOK" STANG	✓		
REP. NORM WALLIN	✓		
REP. DIANA WYATT	✓		

CS05ED.MAN

EXHIBIT #1
DATE 1-16-91
HB 116

RULE 10.55.804 GIFTED AND TALENTED (1) Beginning 7/1/92 the school shall make an identifiable effort to provide educational services to gifted and talented students which are commensurate with their needs and foster a positive self-image.

(2) Such services shall be outlined in a comprehensive district plan which includes:

(a) Identification of talent areas and student selection criteria according to a written program philosophy;

(b) A curriculum which reflects student needs;

(c) Teacher preparation;

(d) Criteria for formative and summative evaluation;

(e) Supportive services;

(f) Parent involvement.

(Eff. 7/1/92)

EXHIBIT # 2
DATE 1-16-91
HB 30

The Office of Public Instruction

Nancy Keenan
State Superintendent

State Capitol
Helena, Montana 59620
(406) 444-3095

December 14, 1990

To: District Superintendents

From: Nancy Keenan NK

Re: Distance Learning and your students

I am excited to provide you with information regarding the latest developments for educational telecommunications in Montana. As a result of input from over 1,000 Montanans and through the cooperative efforts of staff from the Office of Public Instruction, Department of Administration, and Office of Commissioner of Higher Education, and our consultant, Lambda Communications, Inc., we have an initial plan for the development of Montana Educational Telecommunications Network (METNET).

This plan includes a five year goal of providing all Montana schools with distance learning opportunities through the use of multiple telecommunication technologies. The purpose of METNET is to provide access to student enrichment activities, advanced level courses for elementary and high school students, and additional on-site teacher in-service training programs. It is supported with $300,000 of state funds and $150,000 of private funds to match local district funds during this fiscal year. A bill has been drafted requesting that a similar funding structure be approved by the 1991 Legislature for each of the next two years of the biennium.

In addition, the Northwest Educational Telecommunications Partnership, a five-state partnership of Montana, Idaho, Oregon, Washington, Alaska, with ESD 101, Spokane, WA and Apple Computer Inc. has received a one year Star Schools Demonstration Grant. This grant from the U.S. Department of Education will enable us to deliver student courses and teacher in-service training to 40 sites in each state via an integrated computer, modem, telephone, and satellite video delivery system.

These two programs, METNET and the Star Schools Partnership, will begin immediately. Each program carries with it specific goals, activities, eligibility requirements and funding responsibilities of the local district.

An application form for each program is included with this memorandum. Each program will be implemented on a statewide basis through the use of nine (9) Educational Service Areas currently used administratively by the Montana Association of School Administrators. A map outlining these 9 areas is included with this material. You are invited to consider participation in METNET, the Star Schools Partnership, or both.

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A QUICK SUMMARY COMPARISON OF METNET AND THE STAR SCHOOLS PARTNERSHIP

Program:	METNET	Star Schools
Goal:	To establish statewide distance learning networking capabilities through the use of multiple telecommunication technologies, for all K-12 and post secondary education sites within the next 5 years.	To establish a 5 state educational partnership to develop student courses & teacher in-service programs for delivery via satellite & high speed modems to 40 demonstration sites in each state.
Purpose:	To provide access and greater opportunities for K-12 students and teachers to participate in credit courses, enrichment programs, and to use the tools of telecommunications to communicate with each other and the global community.	To provide access and greater opportunities for students in grades 7-12 and K-12 teachers to participate in credit courses, enrichment programs, and to use the tools of telecommunications to communicate with each other and the global community.
Services:	Districts may apply for state matching funds to supplement local funds needed to purchase necessary equipment to participate in distance learning activities within and outside the state. Distance learning courses and inservice programs are available from a variety of sources. A catalog of providers is included with these materials.	Districts may apply for Star School Partnership funds and equipment to participate in student courses and teacher inservice programs from the Partnership. The programs are targeted to students in the upper elementary and high school grades. The teacher appropriate for grades K-12.
Application Deadline:	The application form must be completed and returned to the Office of Public Instruction by January 30, 1991.	The application form must be completed and returned to the Office of Public Instruction by January 11, 1991.

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Ex. 2

Notice of

Montana Educational Telecommunications Network (METNET)

METNET is the more far reaching of two programs to address educational equity and opportunity in Montana schools. Over the next five years, it will provide access for all Montana school districts, Vo-tech centers, and institutions of higher education to communicate with each other and the world, through the use of telephone lines, computers with modems, cable and other video networks, satellite dishes and related telecommunications equipment.

The first years of the program will focus on K-12 students and teachers. It is a cooperative approach to bridge Montana's great physical expanse and provide new educational opportunities for all students at an affordable cost. Districts will be able to extend the purchasing power of their funds through the cost-benefit of large volume bid requests and state funds.

The 1989 Montana legislature provided $300,000 and private sources contributed another $150,000 to provide for distance learning opportunities through telecommunications. These funds will be used to assist K-12 schools purchase necessary equipment to access and participate in a variety of information services, student courses, and staff development programs. A partial list of computer-based, cable, and satellite services and programs is included with this memo. Districts will receive matching funds from the state to supplement local funds designated for distance learning technology.

The METNET application packet includes a list of initial equipment which schools can request for distance learning purposes.

Eligibility

All districts in the state are invited to participate in METNET and receive state assistance in the purchase of equipment to be used for distance learning. Districts which serve students who are Chapter 1 eligible will have a smaller match requirement than districts which do not. See the application form for specific match requirements.

Application Deadline

Applications for participation in METNET are due by January 30, 1991. Send the completed application to Office of Public Instruction, ATTN: METNET, State Capitol, Room 106, Helena, MT 59620. For additional information contact, Ron Lukenbill, 444-2080.

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Notice of

Pacific Northwest Educational Telecommunications Partnership (Star Schools)

The Star Schools Partnership has received one year funding to develop an innovative distance learning program among the state departments of education in Alaska, Idaho, Montana, Oregon, Washington, 200 school sites and Educational Service District 101 (ESD 101), located in Spokane, WA. ESD 101 has been a national leader in the design and delivery of student courses and teacher inservice programs and will serve as the program hub and fiscal agent for the Pacific Northwest Educational Telecommunications Partnership.

Funds from the Partnership will be used to develop new student courses, teacher inservice programs, technical assistance resources in each state education agency, and provide distance education equipment for forty (40) sites in each state. An additional forty (40) sites in each state will be added if second year funding is successful.

The program resources and equipment provided to sites will include a 3.0 meter, steerable C/Ku-band satellite receive dish and tuner, an Apple Macintosh Classic computer with word processing, data base management, graphics, and telecommunications software, an ImageWriter printer, an Apple Scanner, and a 9600 baud modem. Two-thirds of the $3,000 first year membership registration fee with Satellite Telecommunications Education Program (STEP/ESD 101) will also be paid by the Partnership.

Each participating district will be responsible for paying $1,000 of the first year membership fee and documenting at least a 25 per cent match to Federal project funds. Documentation of the match can be achieved through support for an on-site distance learning class facilitator (existing teacher or instructional aide), provision of a video cassette recorder (VCR), TV monitor, telephone line and phone handset in the distance learning classroom. The teacher inservice courses are available through payment of the membership registration fee. Student classes require an additional fee of $350 per student up to six (6) students or $1,800 for up to 100 students. Districts will also be able to receive student enrichment programs and teacher in-service programs produced by ESD 101 at no additional cost.

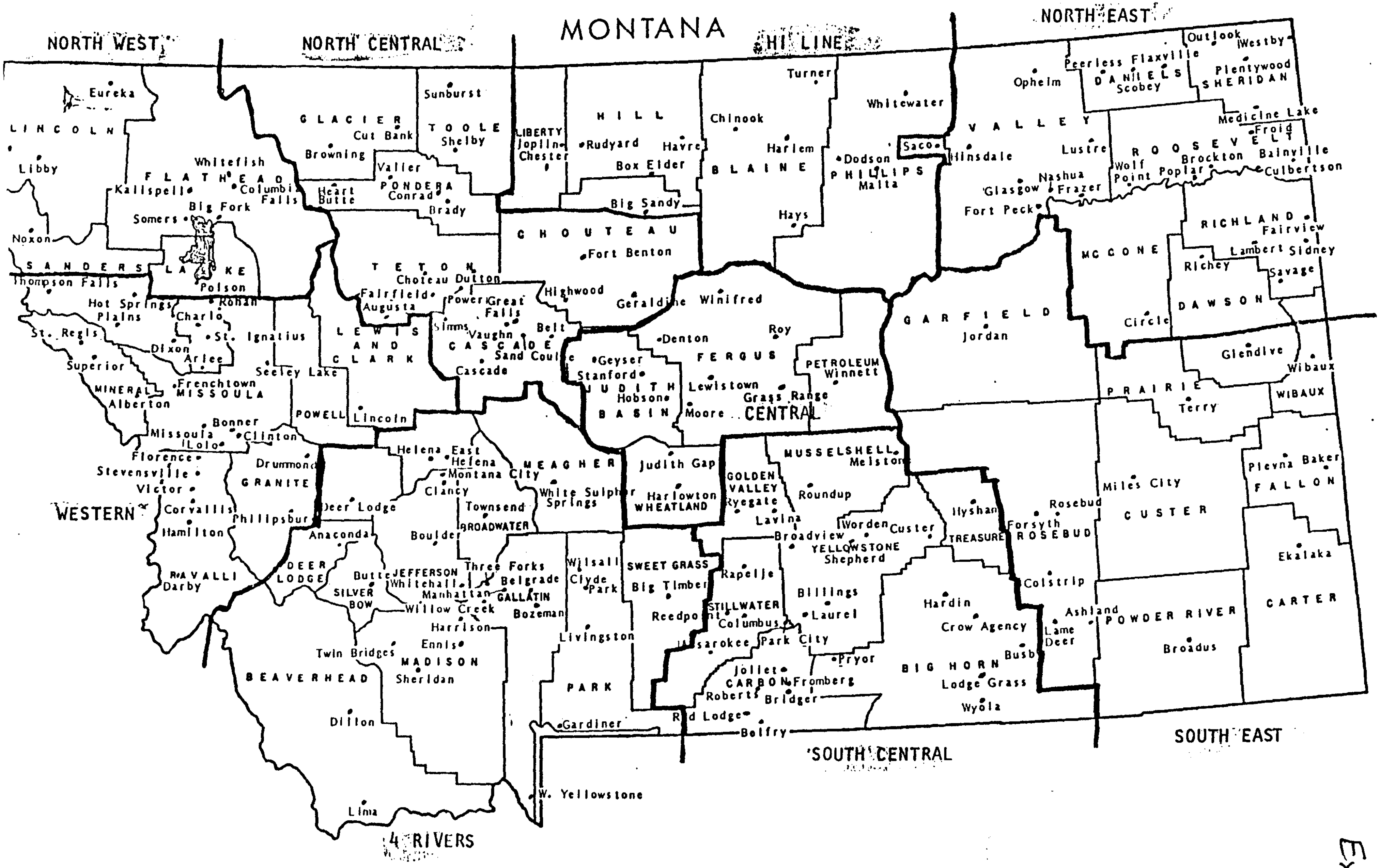
Eligibility

Districts which have not received hardware from prior Star Schools funded programs (TI-IN, SERC, Midlands Consortium, TERC) are eligible to participate in the Pacific Northwest Educational Telecommunications Partnership. Only 40 sites will be selected (4-5 per region) for the first year. Priority will be given to schools serving greater numbers of Chapter 1 eligible students and those located in the more rural communities.

Application Deadline

Applications for participation in the Star Schools Program are due by January 11, 1991. Send the completed application to Office of Public Instruction, ATTN: Star Schools Partnership, State Capitol, Helena, MT 59620. For additional information contact, Ron Lukenbill, 444-2080.

MONTANA ASSOCIATION OF SCHOOL ADMINISTRATORS
Revised April 20, 1990



HB 30
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Ex. 2

EXHIBIT #3
DATE 1-16-91
HB 30

Catalog of Computer-based and Video Distance Learning Programs

Student Courses, Teacher In-service Programs, and Enrichment Programs for Elementary and Secondary Schools

An inital listing of program providers

1990

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Satellite Program Providers

(listings are for Mountain time)

Arts and Sciences Teleconferencing Service (ASTS)
Oklahoma State University
206 Life Sciences East
Stillwater, OK 74078-0276
(406) 744-7077 Contact: Ms. Leigh Walters

C band satellite, membership fee and student fee.

Westar 4 (W4), Channel 13		
Tue, Thu, Fri	9:00a	Trigonometry/Analytic Geometry
Mon. Wed. Fri	10:00p	Applied Chemistry
Tue and Thu	10:00p	Russian 1

Westar 4 (W4), Channel 19		
Mon, Wed, Fri	8:00a	Applied Economics
Tue and Thu	8:00a	Basic English and Reading
Mon and Wed	9:00a	German 1
Tue, Thu, Fri	9:00a	Applied Calculus
Mon and Wed	10:00p	German 2
Tue and Thu	10:00p	Applied Physics

CNN newsRoom
Media Management Services
10 Main Street
Yardley, PA 19067
(800) 344-6219 Contact:

Cable or C band satellite, no membership fee, no student fee.

Galaxy 1 (G1), Channel 7		
Daily	1:45a	newsRoom

C-SPAN in the Classroom
400 N Capitol NW
Washington, D.C. 20001
(202) 737-3220 Contact: Ms. Linda Heller

Cable or C band satellite, no membership fee, no student fee

Galaxy 3 (G3), Channel 14	
Daily	U.S. Senate Special programs

Galaxy 3 (G3), Channel 24	
Daily	U.S. House of Representatives Special programs

Mind Extension University 9697 E. Mineral Avenue Englewood, CO 80112 (800) 777-MIND or FAX (303) 799-1644 Contact: Dr. Donald Sutton C band satellite, student fee
Galaxy 3 (G3), Channel 11
24 hours per day — College classes in the areas of: Business, Math and Science, Education and Library Science, Language and Humanities, Social and Political Science, Interdisciplinary

Education Satellite Network (ESN) Missouri School Boards Association 2100 I-70 Drive SW Columbia, MO 65203 (314) 445-9920 Contact: Ms. Terri Baur Ku band satellite, membership fee, student fee

Educational Telecommunications Network Los Angeles County Office of Education 9300 E. Imperial Highway Downey, CA 90242 (213) 922-6101 Contact: Ms. Celia C. Ayala Ku band satellite, membership fee, student fee

Kentucky Educational Television 600 Cooper Lexington, KY 40502 (606) 233-3000 Ms. Leslie Flanders Ku band satellite, membership fee, student fee
Spacenet 2 (S2), Channel 9
Spacenet 2 (S2), Channel 11

Louisiana Educational Satellite Network (LESN)
Southern University-Shreveport Metro Center
610 Texas Street
Shreveport, LA 71107
(318) 674-3444 Contact: Ms. Deborah (Debo) Harris

C band satellite, no membership fee, no student fee

Montana Public Television
KUSM
Montana State University
Bozeman, MT 59717 Contact: Mr. Jack Hyyppa
(406) 994-3437

Cable or Ku band satellite

Ku Satellite TBA		
Occasional		Educational programs and special events.
Cable KUSM-TV		
Daily	6:15a	Homestretch
	6:45a	AM Weather
	7:00a	Sesame Street
	8:00a	Mr. Roger's Neighborhood
	8:30a	Sit and Be Fit
Mon, Wed	9:00a	Voyage of the Mimi
Tue, Thu	9:00a	Long Ago & Far Away
Fri	9:00a	Blitz on Cartooning
Daily	9:30a	Reading Rainbow
	10:00a	3-2-1 Contact
	10:30a	Mr. Roger's Neighborhood
Mon, Wed	11:00a	Discover: World of Science
Tue	11:00a	Sewing with Nancy
Thu	11:00a	Raising Kids
Fri	11:00a	Nova
Daily	12:00p	Various programs
	12:30p	Various programs
	1:00p	Various programs
	1:30p	Sesame Street
	2:30p	Reading Rainbow
	3:00p	Square One TV
	3:30p	Sesame Street
	4:30p	3-2-1 Contact

NASA's Educational Technology Office
Aerospace Education Services Project
Oklahoma State University
300 N Cordell
Stillwater, OK 74078-0422 Contact: Dr. Bill Nixon

C band satellite, no membership fee, no student fee

Satcom 2R (F2), Channel 13

Occasional	NASA broadcasts many space/science programs of interest to students and teachers. A schedule hotline is available by calling (202) 755-1788.

National Diffusion Network
Satellite Training Broadcasts
KEDDS Link
3030 S Osage
Wichita, KA 67217
(316) 833-3960 Contact: Mr. Jim Connett

C band satellite, no membership fee, no student fee

Westar V, Channel 22 (transponder 11x)

January 3, 1991	Systematic Screening for Behavior Disorders Awareness training
January 10, 1991	Kindergarten Integrated Thematic Experience Awareness Training (Spanish language broadcast)
January 17, 1991	Kindergarten Integrated Thematic Experience Awareness Training (English language broadcast)
January 24, 1991	First Level Math - Kindermath Awareness Training (Spanish language broadcast)
January 31, 1991	Respecting Our Ethnic and Cultural Heritage Awareness Training
February 7, 1991	Successful Inservice Through Turnkey Education (SITE) A math inservice program. Awareness Training
February 14, 1991	Institute for Creative Education (ICE) Awareness Training
February 21, 1991	Physics Resources and Instructional Strategies for Motivating Students (PRISMS) Awareness Training

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Pacific Northwest Educational Telecommunications Partnership
Star Schools

Educational Service District 101 (Regional Office)

Spokane, WA
(509) Contact: Dr. Ted Roscher

Office of Public Instruction (Montana Office)
State Capitol, Room 106
Helena, MT 59620
(406) 444-2080 Contact: Ms. Mary Hartman

C band satellite, membership fee, student fee

Satcom 1R (F1), Channel 22

The first class will begin on January 22, 1991
The complete schedule of programs will be announced in February.

Mon-Thu	8:25a	Science and Technology (for students in grades 7,8,9)

Inservice Programs for Teachers (No fee for member schools)

January 18, 1991	12:30p-2:30p	Teleconference on Distance Learning - FAR VIEW
January 18, 1991	2:45p-3:30p	Classroom Coordinators Training and Orientation
January 18, 1991	3:30p-4:45p	Teacher Inservice for the Science and Technology Class

This 12 hour inservice course will continue throughout the semester in two-hour blocks, 5:00p-7:00p, the exact day is to be determined.

Public Broadcasting Service
1320 Braddock Place
Alexandria, VA 22314-1698

C band satellite, membership fee

Westar 4 (W4), Channels 15, 17, 21, 23

Daily	A variety of educational programs. Also available over some cable or low power TV stations.

Satellite Telecommunications Educational Programming (STEP)
Educational Service District 101
E. 4022 Broadway
Spokane, WA 99202
(509) 536-0141 or FAX (509) 456-3984 Contact: Dr. Ted Roscher

C band satellite, membership fee, student fee

Satcom 1R (F1), Channel 22

Mon - Fri	9:25a	Applied Calculus
	10:20a	Spanish 2
	11:15a	Japanese 1
	12:10a	Advanced Senior English
	1:30p	Spanish 1
	2:25p	Japanese 2
	3:20p	Russian 1
Occasional	5:00p-8:30p	Teacher Inservice

SCOLA
2500 California Street
Omaha, NE 68178
(402) 280-4063 or FAX (402) 280-2336 Contact: Mr. Lee Lubers

C band or Ku Band satellite, membership fee

Spacenet 2 (S2), Channel 16

Mon - Fri	6:45a-11:00p	News programs from: Mexico, Greece, France, Spain, Jordan, Korea. China, India, Japan, Soviet Union, Italy, Germany, Austria, Israel, Iran, Turkey, Yugoslavia, Malaysia, French Canada, Portugal, Holland, Poland, Chile, Zimbabwe, Ethiopia, BBC, Kenya, Pakistan
Sat	8:00a-4:00p	News programs from: Germany, France, Japan, Spanish speaking countries, Soviet Union
Sun	7:00a-11:00p	News programs from: Jordan and Arabic countries, Italy, Israel, Poland, Germany, Austria, France, Japan, Spanish speaking countries, Soviet Union

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The Discovery Channel
8201 Corporate Drive, Box AD
Landover, MD 20785
(301) 577-1999 Contact:

Cable or C band satellite, no membership fee, no student fee

Galaxy 1 (G1), Channel 22		
Mon	7:00a-8:00a	Assignment Discovery: Science/Tech
Tue	7:00a-8:00a	Assignment Discovery: Social Science
Wed	7:00a-8:00a	Assignment Discovery: Natural Science
Thu	7:00a-8:00a	Assignment Discovery: Arts/Humanities
Fri	7:00a-8:00a	Assignment Discovery: World Events
Daily		A variety of educational programs and series.

The Learning Channel
TLC Hotline (800) 346-0032

Cable or C band satellite, no membership fee, no student fee

Satcom 3 (F3), Channel 2		
Daily	12:00p-2:00p	Electronic Library, which includes: MindOver Math, College U.S.A., France Panorama and Espana Y Las Americas, Education Today, University Lecture Series.
Daily		A variety of educational programs and series.

TI-IN Network (Regional Office)
211 Wright St., 5-204
Lakewood, CO 80228
(303) 988-8654 Contact: Mr. Greg Anderson

C band or Ku band Satellite, membership fee, student fee

Galaxy 3 (G3), Channel 36		
Mon - Fri	6:00a	Latin 1
	6:55a	AP Honors English
	7:50a	Spanish 1
	8:45a	Astronomy (Fall)/Marine Science (Spring)
	9:40a	Spanish 2
	10:35a	French 1
	11:30a	Elementary/Intermediate Spanish
	12:00p	Psychology (Fall)/Sociology (Spring)
	12:55p	Spanish 1
	1:50p	Japanese 1

Galaxy 3 (G3), Channel 44		
Mon - Fri	6:00a	Latin 2
	6:55a	Anatomy & Physiology
	7:50a	Physics
	8:45a	German 2
	9:40a	Trigonometry (Fall)/Elem. Anaylsis (Spring)
	10:35a	German 1
	12:00p	French 2
	12:55p	Spanish 2

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Virginia Satellite Educational Network
VA Department of Education
Box 60
Richmond, VA 23216-2060
(804) 225-2400

Satellite information not available

Channel 1		
Mon - Fri	6:35a	Japanese 1
	7:30a	Latin 1
	8:30a	Applied Calculus
	9:30a	Honors Geometry
	10:30a	Latin 3
	3:30p	Teacher Inservice
Channel 2		
Mon - Fri	7:00a	Latin 2
	8:00a	Applied English
	9:00a	Latin 1
	10:00a	Applied Calculus
	11:00a	Science Seminars
	3:30p	Teacher Inservice

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Computer-based Program Providers

Big Sky Telegraph
Western Montana College
710 S Atlantic
Dillon, MT 59725
(406) 683-7338 Contact: Mr Frank Odasz
Modem 406-683-7680
FAX 406-683-7695

- Any computer/modem at speeds up to 9600 baud can access Big Sky.
- Initial electronic logon service is available at no cost to users.
- Full system services for teachers are available at the rate of $50 per year.

Big Sky Telegraph is an online community of educators, business people, and supporters, dedicated to enpowering rural residents with both the knowledge and skills necessary to match community needs with current telecommunications resources and expertise. A trained staff of community curcuit riders is available to assist school and community groups with the use of the system. The networking and information services available through Big Sky include:

- Electronic Mail Networking
- Computer Conferencing
- Text File Transfers
- Online Databases
- Regional Library Services
- FAX, Voicemail, and Optical Scanner services

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EDUNET
Helena High School
P.O. Box 9121
Helena, MT 59604
(406) 442-0085

Contact: Mr. Lee Holmes
Mr. Paul Dorrance

Modem (406) 449-2503

- Any computer/modem at speeds up to 2400 baud can access EDUNET.
- Initial logon service is available by logging on as "Stranger"
- Courses are available at the rate of $250 per semester, plus materials.

EDUNET offers a wide variety of courses to students of all ages, K-100. The majority of semester courses and short term modules are taught by Montana certified high school teachers and carry high school or college credit. EDUNET online services are available 24 hours per day, live instructors are available 8:00a-4:00p weekdays.

- AC Electronics
- Accounting I
- Accounting II
- Algebra I
- Algebra II
- American Government
- Architectural Drafting
- Art Appreciation
- Astronomy
- Bank Teller (module)
- Biology
- Building Thinking Skills
- Business Law
- Business Math
- Consumer and Career Math
- Consumer Law (module)
- Criminal Law (module)
- Curriculum Activities for the Gifted Student (K-8)
- Data Processing (module)
- dBase IV
- DC Electronics
- DOS
- Earth Science
- EDUNET Facilitator Certification
- Energy Exploration (4-8)
- Engineering Drawing
- English I (9th grade)
- Exploration of Space (module)
- Family Law (module)
- Filing (module)
- French I
- French II
- Geometry
- Getting a Job (module)
- Human Relations (module)
- Income Tax Preparation
- Intro to Business/Economics
- Intro to Business Law (module)
- Intro to Soils (4-6)
- Legal Secretary (module)
- Lively Art of Writing

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Goliath
Office of Public Instruction
State Capitol, Room 106
Helena, MT 59620
(406) 444-4439 Contact: Bob Briggs
Modem (406) 444-2068
(800) 346-8654
FAX (406) 444-3924

- Any computer/modem at speeds up to 2400 baud can access Goliath.
- Educators may be sponsored by any OPI curriculum specialist to register their password and to receive access to the system.
- Electronic mail services and file transfer services are available at no cost to educators.

Goliath is an electronic mail system to connect Montana teachers and administrators with one another and curriculum area specialists at the Office of Public Instruction. Teachers can use the system as a teaching tool within their classroom to exchange lesson plans, curriculum material, and to link their students with students in other Montana schools.

MSU Young Scholars
Science/Math Resource Center
Montana State University
Bozeman, MT 59717
(406) 994-3580 Contact: Dr. Gerry Wheeler
Ms. Kim Nelson

- Any computer/modem at speeds up to 2400 baud can access the network.
- Full system services are available to Young Scholars across the U. S.

The MSU Young Scholars program brings together young, talented students who are under-represented in advanced math and science programs. This special program encourages the participation of Native American students, students with physical handicaps, and young women to explore their interests in the fields of science and art. It combines a summer institute held on the campus of Montana State University with an online computer network which is available 24 hours per day to link the scientists of tomorrow with the university and practicing scientists of tomorrow.

Nancy Keenan, Superintendent
Office of Public Instruction
Department of Curriculum Services
State Capitol
Helena, MT 59620

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Montana Educational Telecommunications Network (METNET)
Equipment Application 1990-1991

A cooperative telecommunications program which will provide all K-12 and post-secondary education sites with the capacity to communicate, through the use of multiple technologies, with each other and the world. The appropriation of $300,000 from HB 28 and the required $150,000 match by private funds will be used to support equipment purchases for distance learning classrooms and Regional Distance Learning Training Centers. (See the Catalog of Distance Learning Programs and Services which accompanies this material). Approximately $50,000 will be available per region. This level of state and private support is being requested for each of the next four years.

NOTE:

Districts are encouraged to cooperatively identify at least one district in their MASA region which will serve as a Regional Distance Learning Training Center for development during the first year of state assistance. In addition to the development of a Regional Distance Learning Training Center, individual schools can establish distance learning classrooms through this application. Please duplicate this application form as needed.

Check the Montana Association of School Administrator (MASA) region your school is located in.

Central	Four Rivers	High Line
North Central	North East	North West
South Central	South East	Western

Section 1 Project Information

Location of Distance Learning Site

District Name	District No.	County
Address	City	Zip
Name of School Site		
Site Address	City	Zip
Principal		Phone
Name of Distance Learning Facilitator		Phone
	FAX number if available	

Application Signatures

Printed Name, Chair-person, Board of Trustees	Signature	Date
Printed Name, Superintendent	Signature	Date
Printed Name, Principal	Signature	Date

Section 2 Eligibility Requirements

PROFILE OF SCHOOL COMMUNITY (check all that apply)

___ Chapter 1 eligible district ___% of Chapter 1 students in building
___ Impacted by migrant students ___% of students considered to be migrant
___ Impacted by underserved students ___% of underserved students
(Traditionally underserved students in math, science, and technology programs include girls, Native American students, and students with handicaps.)

___ Rural (district has 75% of students living in communities of 2,500 or less)
___ Remote (district is located 30 or more miles from a population center of 15,000)

___ Small (district has a total enrollment of less than 1,000)
___ Medium (district has a total enrollment between 1,000 and 5,000)
___ Large (district has a total enrollment greater than 5,000)

___ No four year institution of higher education within 50 miles of school.

Section 3 Program Description

3.1 Briefly identify the educational needs in this school which will be met through participation in METNET.

3.2 Outline your district's long-range goals for integrating telecommunication technologies in the curriculum.

Section 4 Classroom locations

List of current classroom(s) used for distance learning activities.
Number of classrooms used for distance learning _____
List room number of classroom(s) used for distance learning and whether they are used for computer instruction, satellite instruction, or both.

Section 5 Telecommunications Equipment

List of current telecommunications equipment available for distance learning activities.
Number of telephone lines in distance learning room. _____
Computer Instructional Equipment
Number of computers in distance learning classroom. _____ Description of computers,i.e., Model, number and size of disk drives, printers.
Number of modems in distance learning classroom. _____ Description of modem type and speed:

Section 5 Telecommunications Equipment (Continued)

Video Instructional Equipment		
Number of VCRs in classroom.		____
Number of television monitors in classrooms.		____
Number of Audio Return Devices in classroom.		____
Cable Television connection at school building?	no ____	yes ____
In classroom	no ____	yes ____
Community television (off air) reception at school building?	no ____	yes ____
Satellite television reception at school building.	no ____	yes ____
In classroom	no ____	yes ____
If satellite equipment is already available at school site, please check dish characteristics.		
Dish type	C-band only	____
	Ku-band only	____
	C/Ku-band	____
Dish material	Mesh	____
	Solid	____
Dish movement	Steerable	____
	Fixed	____
Dish mount	Ground/Pole	____
	Roof	____

Section 6 Request Form

EQUIPMENT/SERVICES REQUEST FORM	
SATELLITE INSTRUCTIONAL EQUIPMENT	**Quantity**
AUDIO CONVENER	____
AUDIO RETURN EQUIPMENT	____
C/Ku SATELLITE DISH	____
UPGRADE EXISTING DISH	____
TELEVISION SET	____
VCR	____
COMPUTER INSTRUCTIONAL EQUIPMENT	
MODEM:	
1200 baud	____
2400 baud	____
9600 baud	____
SERVICES	
TELEPHONE LINE(S)	____

METNET

DISTANCE LEARNING NETWORK

MENU OF EQUIPMENT AND SERVICES

1990 - 1991

The following equipment is commonly used in distance learning classrooms for computer - based and satellite - based instruction. The first year expenditure of State funds will be used to purchase this type of network equipment.

EQUIPMENT/SERVICES DESCRIPTION

AUDIO CONVENER
A telephone line, speaker, and microphone arrangement used by 15 - 25 people in a distance learning center for the audio portion of a two - way interactive education program. This device is meant for larger groups and would be appropriate for use, as an example, in a regional training center.

AUDIO RETURN EQUIPMENT
A telephone line and telephone devices used by 1-16 people in a distance learning center for the audio portion of a two - way interactive education program. This equipment is meant for smaller groups where the student must use a telephone to interact verbally with the distance learning teacher. A standard telephone, cordless telephone, or speaker telephone may be used as audio return equipment.

MODEM
A communications device for the computer, when connected to a telephone line, which allows for a fully interactive two - way data transmission between computers, computer data bases, and computer bulletin boards. The baud rate indicates the speed at which the data transmission can take place, 1200 baud being the slowest, 9600 baud being the fastest. Computer based educational programs in Montana (Big Sky Telegraph, EDUNET, and Goliath) are available, as well as a myriad of national data bases, such as X-PRESS Information services (available free from TCI), etc.

C/Ku SATELLITE DISH
A pole mounted, steerable 3 Meter satellite dish placed outside the school. This dish would be used to receive educational programs and the one - way video portion of the interactive education program. The Ku Band allows statewide satellite coverage utilizing the existing Ku Band uplink at MSU, the C Band allows statewide satellite coverage using commercial C Band uplinks. Various educational programs are available commercially. See the attached list for a sample of programming available on both Bands.

TV/VCR
The television set would be used to view the one - way video portion of the interactive educational program. The VCR would be used to record the distance learning class, to record for re - use other educational programming available from the satellite, or to play pre - recorded tapes.

METNET
ESTIMATED COST OF DISTANCE LEARNING EQUIPMENT/SERVICES

EQUIPMENT/SERVICES MENU		EST. COST	STATE	LOCAL
SATELLITE INSTRUCTIONAL EQUIPMENT				
AUDIO CONVENER		$ 350	200	150
AUDIO RETURN EQUIPMENT (1 TEL)[1]		150	150	0
C/Ku SATELLITE DISH [2]		1900	950	950
C/Ku SATELLITE DISH(CHAPTER 1) [3]		*1900*	*1250*	*650*
UPGRADE EXISTING DISH [4]		500	500	0
TV AND/OR VCR [5]		600	415	185
COMPUTER INSTRUCTIONAL EQUIPMENT				
MODEM [6]	1200 baud	60	60	0
	2400 baud	150	100	50
	9600 baud	500	300	200

ALL COSTS ARE ESTIMATES

[1]The State will contribute up to a total of $150 toward the cost of one device.

[2]One dish is needed per location, several classrooms may be served by one dish.

[3]Matching funds are based upon a 1:1 formula. Chapter 1 Schools would receive funds from the State at the ratio of 2:1.

[4] The State will contribute up to $500 towards the cost of upgrading an existing dish to meet the minimum requirements of this project. Any costs in excess of this amount will be a local responsibility.

[5]The State will contribute up to a total of $415 toward the cost of a TV and/or VCR.

[6]One dedicated line for the distance learning classroom is recommended. This line may be shared if the computer and the interactive audio are not used at the same time. Two lines are recommended for the distance learning regional center.

METNET
ESTIMATED INSTALLATION AND REOCCURRING COSTS

EQUIPMENT/SERVICES MENU	EST. COST	STATE	LOCAL
INSTALLATION			
TELEPHONE LINE (1) - INSTALL ($65 EA)[1]	$ 65	65	0
INSIDE WIRING	100	0	100
SUBTOTAL	**165**	**65**	**100**
C/Ku DISH INSTALLATION WITH BURIED CABLE TO BUILDING AND 25 FT. OF INSIDE WIRE[2]	500	0	500
INSIDE WIRING (1 CLASSROOM)	250	0	250
SUBTOTAL	**750**	**0**	**750**
TOTAL INSTALLATION	**915**	**65**	**850**

REOCCURRING MONTHLY				
TELEPHONE LINE (1) - FLAT RATE[3]	$	46	0	46
MAINTENANCE/REPAIR[4]		20	0	20
TOTAL REOCCURRING MONTHLY		**66**	**0**	**66**

[1]One dedicated line for the distance learning classroom is recommended. This line may be shared if the computer and the interactive audio are not used at the same time. The State will pay for the installation of the telephone line to the minimum point of presence in a building. The inside wiring costs will vary by location and are a local responsibility, the figure used here is an average for a single telephone line. Two lines are recommended for the distance learning regional center.

[2]The Dish installation costs and the inside wiring costs will vary by location. The inside wiring costs are a local responsibility, the figure used here is an average for a single classroom.

[3]Monthly telephone line costs and long distance charges are a local responsibility. Monthly costs vary with location.

[4]Maintenance on all the equipment is minimal. The monthly figure is for budgeting purposes only, in case repairs are needed.

"DISTANCE LEARNING CLASSROOM"

D.L. CLASSROOM EQUIPMENT / SERVICES SAMPLE PACKAGE

EQUIPMENT/SERVICES	EST. COST	STATE	LOCAL
SATELLITE INSTRUCTIONAL EQUIPMENT			
AUDIO RETURN EQUIPMENT (1 TEL)	$ 150	150	0
C/Ku SATELLITE DISH	1900	950	950
C/Ku SATELLITE DISH (CHAPTER 1)	*1900*	*1250*	*650*
TV AND/OR VCR	600	415	185
COMPUTER INSTRUCTIONAL EQUIPMENT			
MODEM - 1200 baud	60	60	0
INSTALLATION			
TELEPHONE LINE (1) - INSTALL ($65 EA)	65	65	0
INSIDE WIRING	100	0	100
C/Ku DISH INSTALLATION WITH BURIED CABLE TO BUILDING AND 25 FT. OF INSIDE WIRE	500	0	500
INSIDE WIRING	250	0	250
TOTAL	**3625**	**1640**	**1985**
TOTAL (CHAPTER 1)	***3625***	***1940***	***1685***

"DISTANCE LEARNING REGIONAL CENTER"

D.L. REGIONAL CENTER EQUIPMENT / SERVICES SAMPLE PACKAGE

EQUIPMENT/SERVICES	EST. COST	STATE	LOCAL
SATELLITE INSTRUCTIONAL EQUIPMENT			
AUDIO CONVENER	$ 350	200	150
C/Ku SATELLITE DISH	1900	950	950
C/Ku SATELLITE DISH (CHAPTER 1)	*1900*	*1250*	*650*
TV AND/OR VCR	600	415	185
COMPUTER INSTRUCTIONAL EQUIPMENT			
MODEM - 2400 baud	150	100	50
INSTALLATION			
TELEPHONE LINE (2) - INSTALL ($65 EA)	130	130	0
INSIDE WIRING (2) - ($100 EA)	200	0	200
C/Ku DISH INSTALLATION WITH BURIED CABLE TO BUILDING AND 25 FT. OF INSIDE WIRE	500	0	500
INSIDE WIRING	250	0	250
TOTAL	**4080**	**1795**	**2285**
TOTAL (CHAPTER 1)	***4080***	***2095***	***1985***

ALL COSTS ARE ESTIMATES, MONTHLY COSTS NOT INCLUDED IN THESE FIGURES.

Nancy Keenan, Superintendent
Office of Public Instruction
Department of Curriculum Services
State Capitol
Helena, MT 59620

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DATE 1-16-91
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Northwest Educational Telecommunications Partnership
Star School Site Application 1990-1991

A cooperative demonstration project of Alaska, Idaho, Montana, Oregon, and Washington schools with ESD 101, Spokane, WA and Apple Computer Inc., funded by the U.S. Department of Education. The Partnership will provide opportunities for student and teacher distance education programs through telephone, computer, and satellite technologies.

NOTE:
Duplicate application forms as needed if more than one school site is to be considered as a Star School site within the district. Four to five sites will be selected within each of the 9 MASA regions, for a total of forty Montana sites this year. An additional 40 sites will be selected for the 1991-1992 year contingent on Federal funding.

Check the Montana Association of School Administrator (MASA) region your school is located in.

Central	Four Rivers	High Line
North Central	North East	North West
South Central	South East	Western

Section 1 Project Information

Location of Distance Learning Site		
District Name	District No.	County
Address	City	Zip
Name of School Site		
Site Address	City	Zip
Principal		Phone
Name Distance Learning Facilitator		Phone
	FAX number if available	

The submission of this application indicates a commitment by this school district to participate in the Pacific Northwest Star Schools Project should the application be approved by the Office of Public Instruction. The persons signing below have read the Notice of the Star Schools Project and this completed application and agree to commit district resources to meet the requirements as described. A Board resolution confirming the district's commitment will be submitted if this application is approved.

Application Signatures

Printed Name, Chairperson, Board of Trustees	Signature	Date
Printed Name, Superintendent	Signature	Date
Printed Name, Principal	Signature	Date

Section 2 Eligibility Requirements

PROFILE OF SCHOOL COMMUNITY (check all that apply)

Students:	yes/no	% of students
Chapter 1 eligible students in building	____	____
School impacted by migrant students	____	____
School impacted by underserved students (Traditionally underserved students in math, science, and technology programs include girls, Native American students, and students with handicaps.)	____	____

Location:	yes/no
Rural (district has 75% of students living in communities of 2,500 or less)	____
Remote (district is located 30 or more miles from a population center of 15,000)	____

Size:	
Small (district has a total enrollment of less than 1,000)	____
Medium (district has a total enrollment between 1,000 and 5,000)	____
Large (district has a total enrollment greater than 5,000)	____
Four year institution of higher education is within 50 miles of school.	____

Requirements of local districts for participation in Northwest Educational Telecommunication Partnership as a Star School Site.

A two year commitment is required from the school district with at least a 25% match to Federal dollars through:

- support for on-site facilitator for the telecommunications courses, (includes time in classroom, time for training classes, and time for completion of required reports for Star School project evaluation);
- fees for classes in which students participate;
- participation in a minimum of one teacher in-service course;
- provision of the following equipment: VCR, TV monitor, classroom telephone;
- $1,000 toward Star School membership fee during first year, and no more than $3,000 toward Star School membership fee during second year; and,
- completion of all required federal and project monitoring and data collection forms.

Section 3 Program Description

3.1 Briefly identify the student curriculum needs which will be met through participation in this project. State specific outcomes you anticipate as a direct result of participation by students.

3.2 Briefly identify the teacher training needs which will be met through participation in this project. State specific outcomes you anticipate as a direct result of participation by teachers.

3.3 Outline your district's long-range goals for integrating telecommunication technologies in the curriculum.

3.4 Outline the schools current commitment and use of educational telecommunications in teaching and learning.

3.5 Describe how this project will be integrated into the district's curriculum goals.

Section 4 Star School Courses/Programs

Identify which courses/programs your school is interested in subscribing to and the approximate numbers of students/teachers you anticipate registering for each course.

Student Courses	Date	Interest	Number
Science and Technology for Middle School	Jan 91	____	____
General Education Development (GED)	Jun 91	____	____
Summer Basic Skills for Elementary	Jun 91	____	____
Career Paths for Middle School	Sep 91	____	____
Principles of Technology (High School)	Sep 91	____	____
Staff Development Program	**Date**	**Interest**	**Number**
Distance Learning Technologies in the Classroom	Jan 91	____	____
On-site Facilitator Training	Jan 91	____	____
Whole Language Approach	Jan 91	____	____
Northwest Native Cultures	Jan 91	____	____
Summer Basic Skills (for student course)	Jun 91	____	____
Hands-On Inquiry Mathematics and Science	Year 2	____	____
Teaching At-Risk Students	Year 2	____	____
Involvement of Parent and Community	Year 2	____	____
Student Self-Esteem and Motivation	Year 2	____	____

Section 5 Telecommunications Equipment

List current telecommunications equipment which is available for the distance learning classroom to count toward local match.		
Number of telephone lines in distance learning room.		____
Computer Instructional Equipment		
Number of computers in distance learning classroom. Description of computers,i.e., Model, number and size of disk drives, printers.		____
Number of modems in distance learning classroom. Description of modem type and speed:		____
Video Instructional Equipment		
Number of VCRs in classroom.		____
Number of television monitors in classrooms.		____
Number of Audio Return Devices in classroom.		____
Cable Television connection at school building?	no ____	yes ____
In classroom	no ____	yes ____
Community television (off air) reception at school building?	no ____	yes ____
Satellite television reception at school building.	no ____	yes ____
In classroom	no ____	yes ____
If satellite equipment is already available at school site, please check dish characteristics.		
Dish type	C-band only	____
	Ku-band only	____
	C/Ku band	____
Dish material	Mesh	____
	Solid	____
Dish movement	Steerable	____
	Fixed	____
Dish mount	Ground/Pole	____
	Roof	____

EXHIBIT #6
DATE 1-16-91
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PROPOSED DISTANCE LEARNING CAPABILITIES

FOUR TYPES OF SYSTEMS WOULD BE DEPLOYED

1. **INTERACTIVE COMPUTERIZED LEARNING**

   MODEMS PROVIDED THROUGH METNET

   CARRIED OVER EXISTING TELEPHONE NETWORKS (U.S. WEST, COOPERATIVES AND INTEREXCHANGE FIRMS)

   ACCESS TO EDUNET, BIG SKY TELEGRAPH, YOUNG SCHOLARS PROGRAM, AND OTHERS

2. **ONE-WAY VIDEO - TWO-WAY AUDIO**

   SATELLITE DISH PROVIDED THROUGH METNET

   AUDIO AND VIDEO EQUIPMENT PROVIDED THROUGH METNET

   VIDEO SIGNAL RECEIVED BY SATELLITE DISH

   AUDIO BACK CARRIED BY EXISTING TELEPHONE NETWORKS

   OKLAHOMA STATE UNIVERSITY,MIND EXTENSION UNIVERSITY (COLORADO), ESD 101 (SPOKANE), TI-IN NETWORK (TEXAS) MONTANA UNIVERSITY SYSTEM BROADCASTS, MANY OTHERS.

3. **ONE-WAY VIDEO - ONE-WAY AUDIO**

   SATELLITE DISH PROVIDED THROUGH MENTE

   VIDEO AND AUDIO SIGNAL RECEIVED BY SATELLITE DISH

   C-SPAN, CNN NEWS, DISCOVERY CHANNEL, THE LEARNING CHANNEL, NATIONAL DIFFUSION NETWORK, NASA'S AEROSPACE EDUCATION SERVICES PROJECT, MANY OTHERS.

4. **TWO-WAY INTERACTIVE VIDEO AND AUDIO**

   EQUIPMENT PROVIDED BY METNET

   COMBINATION OF COMPONENTS REQUIRED (CAMERAS, MONITORS, AUDIO EQUIPMENT, CODECS)

   DIGITAL SIGNALS CARRIED BY EXISTING TELEPHONE NETWORKS

   COLLEGE CREDIT TRANSFER (MBA COURSE FROM MISSOULA TO BILLINGS), SPECIALIZED COURSE BROADCAST TO MULTIPLE SITES, RE-CERTIFICATION TRAINING FROM UNIVERSITIES, GIFTED TEACHERS TO STUDENTS.

EXHIBIT #7
DATE 1-16-91
HB 30

DATE: January 16,1991.

TO: Education and Cultural Resources Committee.

FROM: Jan Wright, Montana Education Association.

RE: HB 30 "Telecommunications, Education Funding, and the New Economy."

The video briefly mentioned that students need many specialized courses, like foreign languages, advanced math and various sciences, to get into colleges and universities and then do well once they are there. I would like to further emphasize this point to demonstrate the need for an effective, state-wide telecommunications network. This network could help equalize learning opportunities for students in rural areas while also strengthening urban schools with curricular diversity. The benefits of this program would not be limited to Montanans under 18, however. Individuals and businesses within the community could also benefit through night classes, in-service training, and business seminars. For a relatively insignificant amount of money, this legislature has the opportunity to make a significant contribution to Montana's future.

Montana has been ranked very low nationally by the Council for Economic Development (CED) in the areas of transportation, communication, sales-market location, value-added industry infrastructure and other vital variables for economic development. But we have, however, ranked very high in the quality of our public school system and the quality of our work force. Montana's educational system is our edge and is the best single lever for assuring economic development and competitiveness in the 21st century. To maintain

this edge, we must invest in our future, our students.

METNET can effectively teach the skills that are now and will increasingly become necessary for future job markets and general economic development. Community members, local businesses, and government agencies could be trained locally at a reduced cost to both the employee and the employer (including the State of Montana). Foreign languages, for example, a subject area that has traditionally been difficult to provide in sparsely-populated areas, will be increasingly critical to participate and compete in the grain sales market of eastern Europe or China, the lumber or beef markets of Japan, or the almost limitless but challenging opportunities presented by the European Common Market come 1992.

Every industry in Montana could be enhanced, but the benefits in the education industry are the most easily demonstrated. Students who study a foreign language while in K-12 have correlated higher scores on SAT Verbal tests, a major factor in the admission procedure for colleges and universities. And of the 314 four year colleges and universities listed in the 5th Edition of Peterson's Guide to Competitive Colleges, 87 institutions require 2 years of a foreign language for entrance and 171 recommend up to 3 years of a foreign language. Together, 82% of the competitive colleges and universities in the nation have a foreign language policy for entrance. Our own higher education institutions recommend 2 years of a foreign language for entrance. Additionally, 2/3 of ALL 4 year institution nationally require study in a foreign language for a baccalaureate degree, and the requirements continue to increase as a student progresses through graduate and doctoral studies.

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Obviously, students familiarized with a foreign language in high school have an advantage when they apply to enter a college or university and have a head start once they get there. An interactive telecommunications system can effectively accomplish the goal of teaching students. In Fairfield High School, for example (video), nine girls took Japanese from a teacher in Spokane through the EDS Program, and according to the teacher they were at the top of the class. I speak Japanese fluently: Nihongo wa totemo taisetsu to omoimasu. Nihon ni minna ga Eigo o benkyo-o-suru node, America nimo benkyo-o-shinakereba, shitsurei ni naru kamo shirimasen. This skill is incredibly marketable. I translated for Governor Stevens in October, 1990, and future Japanese-speaking Montanans and I will have many opportunities to assist in developing international trade potential.

Advanced math and various sciences can also be effectively taught on a telecommunications system, and will also improve the competitiveness of Montana students nationwide. On a system that is in place now, for example, physicist Dr. George L. Johnston from the Plasma Fusion Center at MIT is teaching Chaos Theory mathematics by modem. To give you a feel of the excitement the students have developed for math, science and learning in general, this is a quote from an interactive, telecommunications exchange that occurred on October 26, 1990: (quote).

I, for example, as a Chemical Engineering student at MSU, have received A's in all my calculus and advanced calculus courses and have not had the opportunity to do the type of mathematical exploration Matt, Seth and Dave were so enthusiastic about. These students have

had an incredible opportunity to discover the beauty of math, to reinforce their creative thinking, and to intimately understand the computer system. Their experience, outlined in the quote, will certainly be an advantage for these students as they progress through their academic and later professional careers.

The familiarity students will develop with computers and telecommunication technology could very well attract industries that are not dependent on our transportation systems, our sales-market location, or our natural resources. Communication industries, software manufacturers, and technological researchers could establish regional bases in Montana. The additional income of environmentally-sound industry, providing jobs for Montanans, could easily pay for the initial costs of the state-wide program proposed in this bill.

Because of the opportunities to be made available, despite distance, because of the potential benefits of curricular diversity, and because of the potential to build on Montana's existing strengths to promote economic vitality for the benefit of all Montanans, the MEA supports this bill as a measure to support Montana's future.

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Item: 120 by daves at oldcolo.UUCP
Author: [Dave Sawtell]
Subj: Basins of attraction in a cubic
Keyw: Matt's basins work

Date: Fri Oct 26 1990 16:16 MDT

Dr Johnston:
I wanted to let you know what a great time Matt, Seth and I had while working on your questions 4a-2 and 4a-3. We spent nearly three afternoons investigating the cubic,

x_n+1 = sx_n(1 - x_n^2).

Once we had the basins figured out, Matt wondered what would happen with seed values outside the domain -1 < x_0 < 1. So he wrote a simple program to do the iterations and started with x_0 = 1.3.

I think that one went to infinity. Then for some reason he tried a slightly smaller seed, maybe x_0 = 1.2. To the surprise of us all that went to one of the attractors, (I think we let s = 1.8).

Matt tried another seed value and that one went to the other attractor. We spent quite some time trying to get a feel for what was happening. I sent him off that day with the mission to write a program to graph the seed values on the x-axis and the finite attractors on the y-axis. Seth was to do a program which, by successive approximations, would try to locate the boundary which separated the seed values which went to the postive attractor from the seed values which went to the negative attractor.

The next afternoon we had both programs up and running. Matt had written his so that we could "zoom in" to see these boundary

points more closely. By doing this we came up with the hypothesis that the boundary points were seeds which went to attractor 0.

Seth's program was giving us some approximations of these boundary values. We booted up a commercial graphing program to look at the cubic and began talking about finding an analytic solution. While staring at the graph, Matt suddenly realized how this was working. He decided that we should solve the cubic for values which would yield the value 1. We had already discussed how a seed value of 1 would immediately go to 0. Once we had those values then we would solve cubic for other values which would yield the first set of values. We would continue this and these would be our boundary values.

I said that his idea was beautiful but we'd have our work cut out for us with solving the cubic. We went to a dictionary of mathematics to see if its entry "cubic" would be of help. There was nothing helpful there, but that entry directed us to Cardan. We were very excited when we saw that we had the right form of a cubic to use his solution. This time I sent Matt away with the mission to program this method of solution and come back with a list of boundary points.

EXHIBIT #8
DATE 1-16-91
HB 30

TESTIMONY ON HOUSE BILL NO.30 OFFERED BY
PATRICK M. HOGAN
TELECOMMUNICATIONS RESOURCES, INC.

Telecommunications Resources, Inc., (TRI) has reviewed the proposed ACT to establish a Montana Educational Telecommunications Network.

As a provider of state-of-the-art digital communications services to businesses operating in Montana, TRI is supportive of telecommunications opportunities that would benefit the educational needs and spur economic development throughout the State of Montana.

We agree that telecommunications can contribute to and enhance the educational opportunities for all Montanans. The community benefits from access to modern telecommunications services and technologies such as digital switching and video communications services which can be a major asset for helping satisfy the rural communities educational needs. Providing affordable and quality telecommunications services to urban and rural communities can be satisfactorily met by private sector communications providers operating in a competitive telecommunications marketplace.

The Montana Educational Network (METNET) can be a viable, affordable network providing educational services on a geographically equal basis. TRI believes a strong public private sector relationship is necessary in order to develop technology assessments and network facilities plans in order to implement and satisfy the needs of the educational community. Based on our knowledge of the telecommunications industry in Montana, there are adequate digital facilities either in place or under construction by independent, private and utility telecommunication companies to provide, voice, data and video services to most of Montana's communities.

With the know-how, equipment and facilities provided by the private sector and proper guidance and administration provided by the State of Montana we at TRI feel confident METNET is the start of an investment whose potential returns for the State of Montana have yet to be realized.

SCHOOL ADMINISTRATORS OF MONTANA

MONTANA ACADEMY FOR LEADERSHIP DEVELOPMENT
515 NORTH SANDERS
HELENA, MT 59601-4597
(406)442-2518

EXHIBIT #9
DATE 1-16-91
HB 30

To: Members of the Education & Cultural Resources Committee

From: Loran Frazier, Project Director

Re: H.B. 30

The School Administrators of Montana support the passage of H.B. 30. Telecommunication services are very important to a state such as Montana. This bill provides a start for schools to become involved in an Educational Telecommunications Network.

Telecommunications will provide an opportunity for schools to enhance their curriculums and provide service for special students. It will also provide an opportunity for schools and communities to offer needed inservice to administrators, teachers and employees.

In recognition of the importance of telecommunications, the Montana Academy for Leadership Development, in cooperation with the State Superintendent of Public Instruction is providing two informational workshops on distance learning this year to administrators and will provide more workshops in the future.

Again, telecommunication is an important service. I encourage you to support H.B. 30. I have enclosed some information taken from the Bulletin from the Office of Educational Research and Improvement on Star Schools.

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Star Schools

It's too expensive for a tiny school district in Tornillo, Texas, with 380 students, to hire teachers for specialized or advanced classes in which there are just a few students. However, satellite technology allows students to watch courses presented live from San Antonio and even ask the teacher questions by telephone. The arrangement was made possible by OERI's Star Schools Program.

First funded in 1988 with 2-year grants to telecommunications partnerships, the Star Schools Program has coordinated its efforts with other federal, state, and local resources.

Distance learning, instruction that takes place between a teacher and student in different locations, often lets students in remote areas take advanced classes in calculus, physics, and foreign languages.

Almost 3,000 schools in 45 states participated in the program's first 2 years. More than 100,000 students took enrichment programs or performed science experiments, and 23,000 teachers took college courses or participated in staff development. Each of the grantees from 1988 is continuing to provide services, even though federal funds have expired.

TI-IN United Star Network, based in San Antonio, is a partnership of private sector, universities, state departments of education, and a local school district. TI-IN has provided over 2,000 hours of course offerings delivered by satellite to students in Tornillo and 20 states.

Also funded by Star Schools in 1988 was the Satellite Educational Resources Consortium (SERC). With courses in Japanese, Russian, probability and statistics, and advanced placement economics, SERC reaches 300 high schools in 23 states. Its partnership includes 19 state departments of education, their affiliated educational television entities, and four cities.

Star Schools funded the Midlands Consortium at Oklahoma State University in Stillwater, which has installed nearly 300 downlinks in its five-state region. Student courses and staff workshops are delivered via satellite.

Technical Education Research Centers, Inc. (TERC), based in Cambridge, Massachusetts, was also funded in 1988. Using microcomputers and a telecommunications network, TERC helps over 6,000 students in grades 7-12 tackle math and science concepts by actively engaging in research. TERC works through 10 research centers to train teachers to engage students in hands-on learning.

Star Schools made 4 grants totaling $14,813,000 during FY 1990:

- Telecommunications Education for Advances in Mathematics and Science Education (TEAMS), Los Angeles County Office of Education, Downey, CA, was awarded $3,450,000.
- Central Education Telecommunications Consortium, Black College Satellite Network, Washington, DC, was awarded $1,400,000.
- Reach for the Stars, Massachusetts Corporation for Educational Telecommunications (MCET), Cambridge, was awarded $4,913,000.
- Pacific Northwest Educational Telecommunications Partnership, Spokane, WA, was awarded $5,050,000.

Two OERI-funded laboratories have publications examining distance learning policy issues. Far West Laboratory's *Distance Learning Policy Brief* (with inserts on Arizona, California, Nevada, and Utah) examines the most promising combinations of technologies, actual projects, and policy implementation issues. The brief is $4.50 from Far West Laboratory for Educational Research and Development, 730 Harrison St., San Francisco, CA 94107. An article titled "A Study of Distance Education Policies in State Education Agencies" is available for $6.35 from the Northwest Regional Educational Laboratory, 101 S.W. Main St., Suite 500, Portland, OR 97204.

For Star Schools information, call Frank Withrow, PIP, 202–219–2116.

ED Answers

ED Answers is a sampling of questions received by OERI's Education Information Branch, and the answers.

Q: How much does the United States spend on education? *Newspaper reporter.*

A: For school year 1990-91, Americans will spend a projected $384 billion for elementary, secondary and higher education—6.9 percent more than the estimated $359 billion spent for 1989-90. Of the $384 billion, $231 billion will go to elementary and secondary and $153 billion to higher education.

Q: What is the starting salary of a college graduate? Are salaries going up? *Guidance counselor.*

A: The average salary of 1985-86 bachelor's degree recipients was $20,300 in June of 1987. This was 15 percent higher than 2 years earlier and 34 percent higher than 6 years earlier.

Q: Do we have data on the political participation of young Americans? *Ph.D. candidate.*

A: Two longitudinal studies show that high school graduates in the 1980s were politically less active than those of the '70s. For '80s graduates, 61 percent voted in a state, local or national election, 14 percent contributed money or bought tickets to help a candidate, and 25 percent tried to persuade someone to vote for or against a candidate. For the '70s graduates, the figures were 68, 21, and 34 percent, respectively.

Q: What are the most popular college majors? *Speech writer.*

A: Of the 993,362 bachelor's degrees conferred in 1988, 243,344 (almost a quarter) were conferred in business and management. The second most popular major was social sciences with 100,270 bachelor's degrees awarded. Third place went to education at 91,013 in 1988—its first increase in 15 years.

* * * *

For ED Answers to your questions, call the OERI Information toll free phone number, 800–424–1616 between 8 a.m. and 4 p.m. eastern time (in DC, call 626–9854).

EXHIBIT #10
DATE 1-16-91
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HOUSE BILL 30 TESTIMONY BEFORE HOUSE COMMITTEE ON EDUCATION AND CULTURAL RESOURCES U S WEST COMMUNICATIONS January 16, 1990

U S WEST believes that the investment made in education today determines the quality of our lives and our economic future. We support efforts, such as House Bill 30, that look for creative ways to solve the problems facing education in Montana.

Declining enrollments, higher accreditation standards and college admission requirements and dwindling teacher resources make it difficult for small rural schools and even urban schools to provide programs our children need. Distance Learning presents Montana with a great opportunity to begin addressing these problems.

In several other U S WEST states, schools are linking in geographic clusters to share curriculum and teaching resources. These two-way interactive voice/video/data networks employ a variety of technologies including satellite, fiber optics, microwave and the existing telephone network. Technology is not necessarily the key behind the success of these models. Local commitment, a detailed assessment of educational needs and priorities, cooperation among member schools, proper planning and training are the keys. Technology is simply the tool that can help educators achieve their objectives.

We encourage you, as a part of House Bill 30, to give equal consideration to all interactive technologies in the deployment of the Montana Educational Telecommunications Network. We believe that this legislation should: 1) further define the network and, 2) while ensuring connectivity among network sites, give participating schools the flexibility to lease or purchase the most appropriate technology based on their individual needs.

We agree that METNET should include a mix of technologies that facilitate rather than dictate the learning process. Technology is rapidly changing and new educational applications are being developed at an even faster rate. We encourage you, through this legislation, to encourage continuing input from an entity such as the Montana Telecommunications Cooperative to review the development of distance learning networks to ensure that new developments and applications are integrated where appropriate.

We applaud the cooperative efforts of the Department of Administration, the Office of Public Instruction and the Commissioner of Education in bringing forth this legislation. We believe that METNET, through the collective resources of these agencies, has the potential to be a comprehensive network for voice, video and data communications for Montana's educational community.

In closing, we support the concept of House Bill 30 and we urge your consideration of the points we've made today to further strengthen the bill.

EXHIBIT #11
DATE 1-16-91
HB 30

WITNESS STATEMENT

NAME Richard Miller BUDGET

ADDRESS 1515 E 6th Ave., Helena

WHOM DO YOU REPRESENT? MT State Library Commission

SUPPORT HB 30 ✓ OPPOSE AMEND

COMMENTS: Mr. Chairman, Members of the Committee. For the record, my name is Richard Miller; I am the MT State Librarian. Representing the MT State Library Commission, I come before you in support of HB 30. As was so eloquently pointed out in the videotape which you viewed, improved telecommunications for education-related purposes in Montana will help tremendously in providing educational opportunities; this cannot be overestimated. Just two examples from the library world may be of interest: several public libraries in our state (in Hamilton, and Libby,) offer distance-learning opportunities for local constituents. We hope many other libraries will also be able to do so in the future. The State Library Commission has just approved a voluntary certification program for librarians, part of which contains provisions for increased continuing education and training for librarians. In both these instances -- distance learning, and the provision of continuing education for the certification of librarians -- The telecommunications system as proposed in HB 30 will contribute significantly to the improvement of library service to all Montanans. I urge your support of HB 30.

PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.
Form CS-34A
Rev. 1985

VISITORS' REGISTER

EDUCATION & CULTURAL RESOURCES COMMITTEE

BILL NO. HB 116 DATE January 16, 1991

SPONSOR Rep. Cody

NAME (please print)	RESIDENCE	SUPPORT	OPPOSE
Allyn Nicholson	Helena		X
~~Loren Fraser~~	~~S.A.M. Helena~~		
Mary Lou Peterson	Helena	X	
Lori Nelson	OPI		X
Eric Olson	MEA		O
Jon Tracy	S.A.M.		✓

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR WITNESS STATEMENT FORM.

PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

VISITORS' REGISTER

EDUCATION & CULTURAL RESOURCES COMMITTEE

BILL NO. HB 30 DATE January 16, 1991

SPONSOR Rep. Peck

NAME (please print)	RESIDENCE	SUPPORT	OPPOSE
Gloria Hermanson	MT Cult. Advocacy	✓	
Jan Wright	MEA	✓	
Becky Flaggemeyer	AT&T	✓	
Wayne Buchanan	BPE	✓	
Patrick Hogan	TRI	✓	
Ken Williams	Entech	✓	
Tom Hopgood	GTE	✓	
Earl Owens	Blackfoot Tel. Cooperative	✓	
Tony Herbert	Administration	✓	
Jim White	Administration	✓	
John M. Hutchinson	MUS	✓	
David L Toppen	MUS	✓	
Richard Miller	Helena	✓	
Doug Barmingham	US West	✓	
Joan Mandeville	MTA - Great Falls	✓	
Mike Trevor	DoA/ISD	✓	
Dan Walker	US West Comm	✓	
[illegible] McKenna	MACSS	✓	
Jay Downen	MTA	✓	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR WITNESS STATEMENT FORM.

PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

CS-33

VISITORS' REGISTER

Educ. & Cult. Resources COMMITTEE

BILL NO. HB 30 DATE 1-16-91

SPONSOR _____

NAME (please print)	RESIDENCE	SUPPORT	OPPOSE
Loran Frazier	S.A.M. Helena	X	
Terry Minow	MSET	X	
Alan Ludwig	Administration	X	
Chip Erdmann	MT Rural Ed Assoc	X	
Gene Phillips	NTS	X	
Bruce W. Moerer	MSBA	X	
David Foster	Brockway	X	⊘
Nick Murnion	Mid-Rivers Telephone	X	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR WITNESS STATEMENT FORM.

PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.