DOCUMENT RESUME

ED 420 473 RC 021 580

AUTHOR McCluskey, Eugene; Chelewski, Ray; Crowley, Timothy; Lee, David

TITLE Small College + Small Communities + Industry: Share Our Strategies for Success.

PUB DATE 1997-11-00

NOTE 16p.; In: Connecting Learning & Work: The Rural Experience. Proceedings of the School-to-Work in Rural Communities in the Northeast Technical Assistance Conference (Saratoga Springs, NY, November 17-18, 1997); see RC 021 578.

PUB TYPE Reports - Descriptive (141) -- Speeches/Meeting Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.

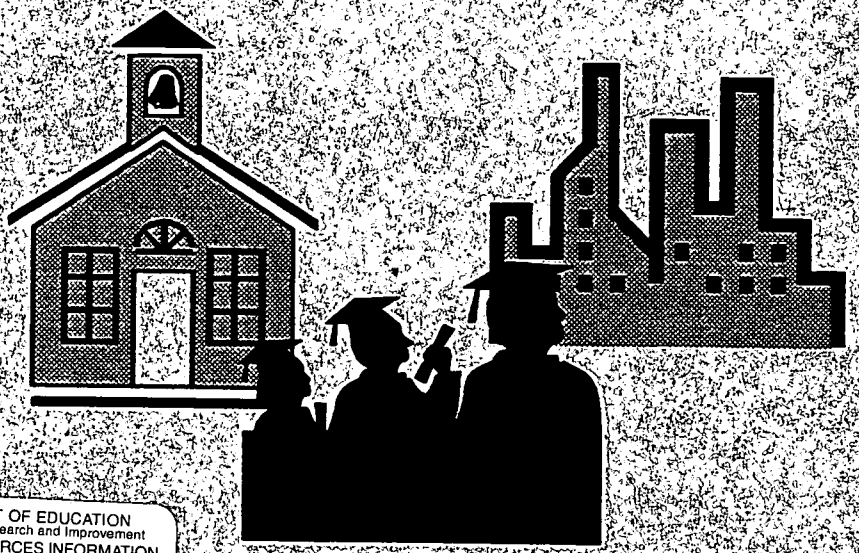
DESCRIPTORS *Articulation (Education); *Competency Based Education; *Consortia; Education Work Relationship; *Educational Objectives; High Schools; Partnerships in Education; Postsecondary Education; Rural Education; Staff Development; *Tech Prep

IDENTIFIERS *Maine; Northern Maine Technical College

ABSTRACT

Established in 1991, the Northern and Eastern Maine Tech Prep/School-to-Work Consortium unites 28 high schools, 7 regional technology centers, 2 technical colleges, and the University of Maine system. The consortium represents educators and employers in Maine's three most northerly counties and has facilitated the change from a traditional curriculum poorly serving non-college bound students to the hands-on tech prep curriculum. Staff development has been a major factor in this effort's success, combined with employer input, formal articulation agreements, and the introduction of technology into the classroom. The consortium is divided geographically into six partnerships. Workshops attended by teachers and technical college faculty are held within each partnership, and teachers have developed networking support groups that meet monthly for roundtable discussions. The consortium has developed 121 competency-based articulation agreements, with Northern Maine Technical College (NMTC) being the lead institution. The "general program" has been eliminated in all consortium high schools, with about a third having a clearly defined tech prep program. This paper includes a list of NMTC courses involved in competency-based articulation agreements and the consortium budget. An attachment provides an activity plan that lists the consortium's 12 goals with related objectives and comments. (SV)

Small College+Small Communities+Industry Share Our Strategies for Success



Presenters: Eugene McCluskey
Ray Chelewski
Timothy Crowley
David Lee

Background

According to the executive summary of Workforce 2000, a publication of the US Department of Labor, "The new jobs in service industries will demand much higher skill levels than the jobs of today. Very few new jobs will be created for those who cannot read, follow directions, and use mathematics. Ironically, the demographic trends in the workforce, coupled with the higher skill requirements of the economy, will lead to both higher and lower unemployment: more joblessness among the least-skilled and less among the most educationally advantaged." These trends raise a number of important policy issues. If the United States is to continue to prosper - if the year 2000 is to mark the end of the first American century - policymakers must find ways to:

"Improve the Educational Preparation of All Workers: As the economy grows more complex and more dependent on human capital, the standards set by the American educational system must be raised."

In addition, the need for technical preparation (Tech Prep) programming has been clearly documented by the US Department of Education and supported by the United States Congress. And focusing at the regional level, in Northern and Eastern Maine, approximately 7,800 students attend secondary schools. Of this number, approximately 4,000 will be impacted by the improved Tech Prep Curriculum.

Clearly, as the academic and technical skills of the secondary students are improved, the number of graduates from technical colleges will increase. The immediate recipient will be the employers of the state as the number of skilled technicians entering the workforce will be enlarged. To meet this challenge by implementing a Tech Prep course of study leading to four years of a balanced focused technical education, the Northern and Eastern Maine Tech Prep/School-To-Work Consortium will improve the academic and workplace skills of those students who will be America's workers at the beginning of a new century of global technology.

Several vocational and technical programs duplicated content in both the secondary regional vocational centers and the technical colleges. As these overlaps are eliminated, the taxpayers of the state will benefit from greater value for each dollar spent on education. Eliminating duplication of program content and ensuring articulation between secondary and postsecondary technical education will allow for education dollars to have greater impact on students in the consortium district.

What It's All About

Tech Prep was introduced into the State of Maine in August, 1991. The Northern and Eastern Maine Tech Prep/School-To-Work Consortium was formed at that time and includes all of Aroostook County, the northern two-thirds of Penobscot County and the northern two-thirds of Washington County, our most "down east" county. The geographical area described above encompasses approximately 40% of the State of Maine with Aroostook County alone encompassing an area as large as the states of Connecticut and Rhode Island combined. The consortium unites 28 high schools, 7 regional technology centers and 2 technical colleges, and the University of Maine system. A Steering Board consisting of high school principals, area superintendents, representatives from business and industry, and secondary and postsecondary instructors provide leadership for the consortium.

The primary founders were the administrators of Northern Maine Technical College and Washington County Technical College along with area vocational directors, high school principals and superintendents. The Northern and Eastern Maine Tech Prep/School-To-Work Consortium represents educators and employers in three counties and has facilitated the change from a traditional curriculum poorly serving the non-college bound student to the hands-on, Tech Prep applied curriculum. Staff development has been the major factor in the success of this Tech Prep/School-To-Work effort, combined with employer input, formal articulation agreements and the introduction of technology into the classroom.

The program philosophy is to develop a new course of study which combines two years of high school with two years at the technical college and, where there is an articulation agreement established, an additional two years at the university. Stronger linkages between the high schools, vocational centers, technical colleges and the four year institutions in our state are also promoted.

The goals of the initiative are to:

- Strengthen the Northern and Eastern Maine Consortium for the purpose of developing occupational programming that satisfies Tech Prep guidelines and encourages students to pursue careers in technology;

- Foster appropriate technical preparation (Tech Prep) courses of study at high schools or vocational centers and regions for articulation into various curricula at the technical colleges;

- Ensure that basic and advanced academic and workplace skills (including mathematics, science, communication and appropriate technologies) will be integrated into every Tech Prep course of study;
- Convert these existing courses of study to competency-based curricula;
- Continue to develop and implement staff development activities for faculty designed to facilitate the implementation of Tech Prep;
- Develop and implement staff development activities for student support personnel designed to facilitate recruitment of students into occupational programming;
- Maximize, for members of special populations, access to and equitable participation in the entire range of occupational programs;
- Utilize knowledge and expertise of labor representatives, business and industry, and community leaders in partnerships;
- Phase out the "General" course of study;
- Develop specific curricula articulation agreements between secondary and postsecondary institutions in the Consortium;
- Foster the implementation of a work-based learning component as an integral part of Tech Prep Program of Studies; and
- Foster the integration/blending of academic subject matter with vocational subject matter and/or the integration/blending of vocational subject matter with academic subject matter.

As noted in the goals, staff development is an integral part and possibly the most important part of implementing new curriculum into any program of studies. Teachers themselves have commented that staff development is crucial on every evaluation sheet that has been received by this office. Support groups for the sharing of ideas and experiences have been organized in this consortium and are well attended.

How It Works

This consortium is divided into six partnerships. Because the geographical area is so large, workshops are held in each partnership to shorten time spent traveling between schools for meetings. Consortium teachers using the applied curriculum have developed networking support groups which meet monthly in roundtable discussions answering questions about implementing the applied curriculum in their schools and demonstrating the use of lab equipment, etc. These are the teachers who have overcome the turf issues which have surrounded them for years realizing that if they are willing to work together and share experiences, their students will be the benefactors.

The way in which the technical college faculty and administrators have given of their time and talents to high school superintendents, principals and teachers is a totally new occurrence in northern Maine. For example, Mr. John Levasseur, Physics Instructor at NMTC, attended a workshop in Waco and has given several workshops in various schools in our consortium. The Tech Prep coordinator is the most instrumental person in bringing together faculty and administrators (secondary and postsecondary) for these types of activities.

This consortium has developed 121 competency-based articulation agreements. One of the agreements, Agri/Business, is a 2+2+2 involving grades 11 and 12 at the high school, 13 and 14 at Northern Maine Technical College, and grades 15 and 16 culminating with a BS degree from the University of Maine.

Of the consortium's many accomplishments, the single most outstanding accomplishment is the Agri/Business Articulation Agreement. This agreement was the first of its kind in the state. The concept has been replicated twice with a focus on the Pulp and Paper Industry. It is in the process of being replicated again, focusing on the Food Service and Hospitality Industries. The Agri/Business agreement was first signed in 1993. To date, seven students have met the parameters of this agreement and are enrolled at Northern Maine Technical College to earn their Associates Degree in Business Administration. This agreement was featured in the 1997 Articulation Report of the New England Board of Higher Education. Also, copies of this agreement have been requested by nine other states. In 1995, this agreement was presented in one of the breakout sessions at the League for Innovations Conference in New Orleans. Most recently, in November 1997, this consortium was recognized by the Region I Chapter of the American Vocational Association as the "Outstanding Business/Educational Partnership" in Maine, and will also be recognized at the National A.V.A. Conference in Las Vegas, December 1997.

Program Competency Based Articulation Agreements

NMTC Course #	Description of NMTC Courses	# of Competencies
BUS221	Principles of Agri/Business Management	47
ABF121	Automotive Body Repair	55
SES113	Production Formatting Skills I	110
SES115	Keyboarding Speed Production I	1
	Business Technology "Accounting"	Description Only
BUS223	Farm Management I	26
BUS225	Farm Management II	58
BUS231	Marketing Farm Commodities	19
	Business Technology "Management"	Description Only
	Business Technology "Marketing"	Description Only
CPT111	Residential Construction	143
COW210	Agri-Business Experience Program	27
DRT113	Drafting	52
	Electrical Engineering Technology	Description Only
ELS112	Basic Electricity/Electronics I – Lecture	Description Only
ELS113	Basic Electricity/Electronics I – Lab	224
MAT021	Technical Math	92
MAT113	Elementary Algebra	123
MAT120	Intermediate Algebra	171
PHE120	Occupational Fitness	35
PHY013	Principles of Technology	516
	Pulp and Paper Technology	Description Only
	Nursing	167
SHM111	Sheet Metal Technology	31
SHM121	Sheet Metal Technology	29
SHM211	Sheet Metal Technology	10
SHM 221	Sheet Metal Technology	21
	Plumbing and Heating Technology	251
	Diesel Hydraulics Technology (& Small Engine Serv.)	544
	Total Number of Competencies:	2,752

Budget

Annual Program Budget

Category of Expenditures	AMOUNT REQUESTED ANNUALLY
Personnel Costs	
1. Salaries (Itemize)	
A. Coordinator	42,987
B. Clerical	20,572
2. Fringe Benefits (Itemize)	22,546
Sub-Total	86,105
All Other Direct Costs	
1. Professional Services (Contractual)	2,100
2. Travel	2,600
4. Postage, Printing	750
6. Miscellaneous Exp. (Describe or	5,245
(*Meetings, Dues, Periodicals, etc.)	
7. Supplies (Itemize + $300)	1,200
8. Educational Grants	
Sub-Total	11,895
TOTAL	98,000

Results

There have been many positive results since this initiative's inception. The most visible result has been the change in attitude of both faculty and students regarding the difference between applied learning and education. Northern Maine Technical College has been the lead institution in promoting change among the consortium partners, and to date, 121 detailed articulation agreements have been formalized.

Also, approximately 85% of the schools of this consortium are involved in one or more components of applied curriculum. The "General Program" has been eliminated in all consortium schools with 30% – 35% of the schools having a clearly defined Tech Prep Program of Studies. Every high school in the Northern and Eastern Maine Tech

Prep/School-To-Work Consortium has implemented one or more of the Tech Prep applied academic courses (Applied Communication, Applied Math, Applied Bio/Chem, Principles of Technology, Economics at Work and Civics at Work). These changes were necessitated by the fact that 50%-60% of the school population, the "neglected majority," were falling through the cracks or getting lost in the "general track."

At a Tech Prep conference held in Caribou, Maine, in June, 1992, to which all teachers throughout this consortium were invited, information and copies of the curriculum were distributed to each high school. Teachers were encouraged to gather as much information as possible related to the implementation of "hands on" materials. Several area principals and teachers attended the first NTPN conference in Chicago earlier that year. *The transformation had begun.*

Teachers began to try the Tech Prep applied curriculum in bits and pieces in their classes. The students were enthusiastic and the teachers liked the results.

The benefits of the applied curriculum allow students to expand their educational opportunities to ensure that they are provided with a focused curriculum relevant for achieving success at the next higher level of learning or for employment.

The bottom line for the success of the Northern and Eastern Maine consortium curriculum changes can in large part be measured by the tallying of numbers. From the school year 1993-94 to the school year 1994-95, Principles of Technology saw an increase of 228%; the enrollment for Applied Math rose from 191 to 567; Applied Communication enjoyed an increase of more than 1,000% and, in its first year, articulated courses have an enrollment of 413, a truly impressive number of students. *By any standard for success, Tech Prep/School-To-Work is happening in this consortium.*

Barriers To Overcome

There are always barriers to overcome with every new initiative. These are the challenges that we must overcome:

- Distance;
- Turf;
- Egos;
- Budget;
- Entrenched teaching methodology; and
- Time.

Contact Persons

ADMINISTRATOR	SCHOOL	PHONE	ADDRESS
Dick Durost, Superintendent of Schools	Easton High School	(207) 488-7702	P.O. Box 66 Easton, ME 04740-0066
Kermit Pooler, Principal	Fort Kent Community High School	(207) 834-5540	55 Pleasant Steet Fort Kent, ME 04743
David Wiggin, Superintendent of schools	Houlton High School	(207) 532-6551	Bird Street Houlton, ME 04730
Bryan Artes, Principal	Penobscot Valley High School	(207) 732-3111	P.O. Box 328 Cross Street Howland, ME 04448
Ray Chelewski, Instructor	Presque Isle Regional Technology Center	(207) 764-1356	79 Blake Street Presque Isle, ME 04769
Paul J. Bouchard, Director	St. John Valley Technology Center	(207) 543-6606	P.O. Box E Upper Frenchville, ME 04784
Jerry White, Superintendent of Schools	Wisdom Middle/High School	(207) 543-7717	P.O. Box 137 St. Agatha, ME 04772
Timothy Crowley, Vice President/ Academic Dean	Northern Maine Technical College	(270) 768-2811	33 Edgemont Drive Presque Isle, ME 04769
Darin McGaw, Dean of Continuing Ed.	Washington County Technical College	(207) 454-1000	River Road Calais, ME 04619

ACTIVITY PLAN

GOAL I: Strengthen the Northern and Eastern Maine Tech Prep/School-To-Work Consortium for the purpose of developing occupational programming that satisfies Tech Prep guidelines and encourages students to pursue careers in technology.

#	OBJECTIVE	DATE	COMMENT
1.	The organizational structure will be reviewed annually and revised if necessary to assure the citizens of the area are served effectively.	Ongoing	Steering board will be responsible. The review will take place at the October meeting
2.	The consortium will continue to invite four year public institutions of higher education to participate in Tech Prep activities.	Ongoing	Steering Board and the Tech Prep coordinator will be responsible.

GOAL II: To foster appropriate technical preparation (tech prep) courses of study at regional high schools or vocational centers for articulation into various curricula at the technical colleges.

#	OBJECTIVE	DATE	COMMENT
1.	Develop a comprehensive sequence of academic and technical courses from grade 9 through completion of a two-year technical college program.	Ongoing	Steering board will assign leadership responsibility to each partnership in developing focused curriculum. This will be overseen by the Tech Prep coordinator.
2.	Provide advanced standing credit options enabling qualified secondary students to earn technical college credit for comparable courses.	Ongoing	Technical college will award advanced placement to students with appropriate technical preparation according to articulation agreement(s) in effect
3.	Develop strong comprehensive links between regional secondary schools and NMTC and WCTC, as evidenced by articulation agreements.	Ongoing	

GOAL III To ensure that basic and advanced academic and workplace skills (including mathematics, science, communications, and appropriate technologies) will be integrated into every tech prep course of study.

#	OBJECTIVE	DATE	COMMENT
1.	Appropriate secondary curricula will be revised to assure that basic and advanced academic and work place skills are incorporated.	Ongoing	Curriculum task forces. Curriculum revisions will begin in some schools by August 1993, and are proceeding to be consortium wide.

GOAL IV Convert three existing courses of studies to competency based curricula.

#	OBJECTIVE	DATE	COMMENT
1.	Continue to utilize DATUM charts to identify the essential competencies for articulation purposes.	Ongoing	
2.	Revise curriculum of plumbing and heating technology, welding technology, and autobody technology programs to implement the competency based instruction.	Ongoing	Curriculum Task Forces with the aid of instructors and craft committees of occupational areas who are the advisory committees.

GOAL V To continue to develop and implement staff development activities for faculty designed to facilitate the implementation of tech prep.

#	OBJECTIVE	DATE	COMMENT
1.	Provide ongoing staff development to assure effective and efficient curricula revision.	Ongoing	Conducted by each partnership team for its members; several completed.
2	To continue to develop support groups in each applied academic area	Ongoing	Task Force and Tech Prep coordinator
3	To continue to provide workshops integrating academic and occupational courses	Ongoing	
4	Provide professional development workshops in Applied Communications, Bio/Chem., Math II, Principles of Technology, involving secondary and post-secondary teachers.	Ongoing	

GOAL VI Continue to develop and implement staff development activities for student support personnel designed to facilitate recruitment of students into occupational programming.

#	OBJECTIVE	DATE	COMMENT
1.	Provide workshops addressing concepts of Tech Prep.	Ongoing	
2.	Provide workshops and seminars as necessary to communicate the critical importance of academic skills for occupational programs.	Ongoing	
3.	Broaden the knowledge of guidance counselors on the opportunities available to students in Tech Prep programming.	Ongoing	Tech Prep coordinator will present workshops for student support personnel

GOAL VII Maximize, for members of special populations, access to an equitable participation in the entire range of occupational programs.

#	OBJECTIVE	DATE	COMMENT
1.	Review (for both existing and new programs) curricula designed and facilities to ensure curricula can accommodate members of special populations.	Ongoing	Preparatory Special Services Committee, with assistance from NMTC counselor.

GOAL VIII Utilize knowledge and expertise of labor representatives, business and industry and community leaders in partnerships.

#	OBJECTIVE	DATE	COMMENT
1.	A procedure will be developed to ensure that each partnership has appropriate representation from labor, business, industry and communities.	Ongoing	Establish private sector committee. Procedures have been developed and will be modified annually.
2	Add one business representative to each partnership	Ongoing	

GOAL IX To phase out the "General" course of study.

#	OBJECTIVE	DATE	COMMENT
1.	Secondary curricula will be reconstructed to provide students greater opportunities for higher education.	Ongoing	Contingent upon approval for individual schools by their respective school board(s) and/or superintendent.

GOAL X To develop specific articulation agreements between secondary and post-secondary institutions in the consortium.

#	OBJECTIVE	DATE	COMMENT
1.	Each partnership will have a minimum of four specific articulated curricula agreements in place by May 1996.	Ongoing	Approved by faculty and administration of participating institutions.

GOAL XI To foster the implementation of a work-base-learning component.

#	OBJECTIVE	DATE	COMMENT
1.	A work-base-learning experience will be written into each program of studies in accordance to individual community policies	Ongoing	This will be collaboratively developed by business & industry representatives and local educators
2.	To implement Work-base-learning experiences which will relate to academic and/or vocational standards of local school-based-learning experiences. Work-base-learning experiences would include one or more activities such as: • field trips • job shadowing • service learning • school-based-learning experiences (ie.building a house and selling, school farm, etc.) • part-time work • internships • co-op programs • apprenticeship programs	Ongoing	This experience will be collaboratively coordinated and evaluated through pre-existing entities so-as not to create additional and unnecessary duplication of effort.
3.	All students enrolled in a Tech Prep program of studies will, as a seamless aspect of his/her individual educational plan, participate in a work-base-learning experience.	Ongoing	Actual number of students will be determined by enrollment

Goal XII: To foster the integration/blending of academic subject matter with vocational subject matter and/or the integration/blending of vocational subject matter with academic subject matter.

#	OBJECTIVE	DATE	COMMENT
1.	Provide staff development workshops focused on promoting understanding of various academics and vocational/technology education learning strategies.	Ongoing	This will be, in part, a cooperative effort with TEAM Tech Prep; workshops will be coordinated through this Tech Prep office.
2.	To identify and list competencies for academic and vocational learning strategies.	Ongoing	This will be accomplished by educators and business and industry representatives within partnerships in collaboration with the competencies developed at NMTC and WCTC and in conjunction with DACUMS and the standards identified in the SCANS report.
3.	To identify commonalties of competencies among various academic and vocational learning strategies. (E.g. math competencies employed within the residential construction industry, or residential construction competencies that address the practical applications of math competencies, etc.)	Ongoing	This will be facilitated by the Tech Prep coordinator.

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

REPRODUCTION RELEASE

(Specific Document)

I. DOCUMENT IDENTIFICATION:

Title: **Connecting Learning and Work: The Rural Experience**	
Author(s): JAMES & CONCETTA SULLIVAN	
Corporate Source: SULLIVAN EDUCATIONAL ASSOCIATES	Publication Date: NOV., 1997

II. REPRODUCTION RELEASE:

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announced in the monthly abstract journal of the ERIC system, *Resources in Education* (RIE), are usually made available to users in microfiche, reproduced paper copy, and electronic media, and sold through the ERIC Document Reproduction Service (EDRS). Credit is given to the source of each document, and, if reproduction release is granted, one of the following notices is affixed to the document.

If permission is granted to reproduce and disseminate the identified document, please CHECK ONE of the following three options and sign at the bottom of the page.

The sample sticker shown below will be affixed to all Level 1 documents	The sample sticker shown below will be affixed to all Level 2A documents	The sample sticker shown below will be affixed to all Level 2B documents
PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY Sample TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) 1	PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE, AND IN ELECTRONIC MEDIA FOR ERIC COLLECTION SUBSCRIBERS ONLY, HAS BEEN GRANTED BY Sample TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) 2A	PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY Sample TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) 2B
Level 1 ↑ ☒	Level 2A ↑ ☐	Level 2B ↑ ☐
Check here for Level 1 release, permitting reproduction and dissemination in microfiche or other ERIC archival media (e.g., electronic) *and* paper copy.	Check here for Level 2A release, permitting reproduction and dissemination in microfiche and in electronic media for ERIC archival collection subscribers only	Check here for Level 2B release, permitting reproduction and dissemination in microfiche only

Documents will be processed as indicated provided reproduction quality permits.
If permission to reproduce is granted, but no box is checked, documents will be processed at Level 1.

I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce and disseminate this document as indicated above. Reproduction from the ERIC microfiche or electronic media by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries.

Sign here, → please

Signature: James M. Sullivan / Concetta C. Sullivan	Printed Name/Position/Title: JAMES M. SULLIVAN CONCETTA C. SULLIVAN / PARTNERS
Organization/Address: 159 Delaware Ave Suite 116 Delmar, NY 12054	Telephone: (518) 475-7728 FAX: (518) 439-4263
	E-Mail Address: jcsul@aol.com Date: 7/5/98