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ABSTRACT

The Mt. Hood Tech Prep Demonstration Project provides technical education to students in grades 9-14 plus opportunities to continue into apprenticeship or four-year college programs. The consortium includes seven Oregon local school districts, Mt. Hood Community College (MHCC), and active business and industry partners. An estimated 1,500 students in each of grades 9-12 participated in tech prep courses during 1993. The demonstration project was subjected to a formal evaluation that was designed by an evaluation advisory committee of secondary and postsecondary personnel. Among the major evaluation activities conducted were the following: comprehensive local tech prep inventory documenting the project's structure and activity; survey of 2,391 consortium students; and articulation study of transcript data of 1,550 MHCC students, 114 of whom had received articulated credit from MHCC for tech prep courses completed in high school. The following recommendations were formulated: more intensive work to increase awareness/understanding of tech prep among students, staff, parents, and employers, improved methods of identifying and monitoring the progress of tech prep program students and completers, and continued development of a student management information system that includes an analysis of the courses completed by the students. (Twenty-three tables/figures are included. Appended is the consortium student survey instrument and tallied responses.) (MN)

The Northwest Regional Educational Laboratory

FINAL REPORT

MT. HOOD TECH PREP DEMONSTRATION PROJECT
FINAL EVALUATION REPORT

December 30, 1994

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101 S.W. Main Street, Suite 500
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Mt. Hood Tech Prep Demonstration Project

Final Evaluation Report

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December 30, 1994

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MT. HOOD TECH PREP DEMONSTRATION PROJECT EVALUATION REPORT

Introduction

This report summarizes data that have been collected during the two years of the evaluation of the Mt. Hood Tech Prep Demonstration Project by the Northwest Regional Educational Laboratory which is serving as the external evaluation contractor. Section 1 provides a summary of the evaluation activities; Section 2, a comprehensive description of the project based on input from sections of the Mathematica Policy Research, Inc. local Tech Prep inventory; Section 3, the findings from a survey of 2,391 11th and 12th grade students in the Consortium, Section 4, results of the analysis of a follow-up study, and Section 5, evaluation recommendations. We recognize the contribution made to the evaluation by others. Jack Miller, Dean of Community and Vocational Development at Mt. Hood Community College, serves as project director of this demonstration project and has completed the Mathematica Policy Research Local Tech Prep Inventory which was summarized in this report. Michael Dillon took over as project director in 1994 upon the retirement of Jack Miller. Marcia Dier, the project coordinator, provided useful information regarding the dissemination of the project. Vern Halcromb, the Multnomah ESL Regional Professional Technical Education Coordinator, facilitated the distribution and return of the student surveys. Dan Walleri, Director of Planning and Research, and Marilyn Kennedy of the Admissions Office at the Mt. Hood Community College helped in identifying the types of information available on their community college students.

1. EVALUATION ACTIVITIES

During this demonstration project a number of evaluation activities were conducted by NWREL. These activities included:

- Formatting an evaluation advisory committee composed of secondary and postsecondary personnel who reviewed draft documents and advised on the implementation of the evaluation
- Preparing and revising an evaluation design specifying the purposes for the evaluation, framework, key evaluation questions, data collection processes, timelines, and reporting procedures
- Attending the USOE meeting in Washington D.C. for project directors and project evaluators to discuss the requirements and approaches for evaluation and the procedures for the Program Effectiveness Review Panel
- Working with the project director in completion of a comprehensive local Tech Prep inventory documenting the structure and activities of the project

- Designing data collection survey forms for collection of feedback information from site visitors about the dissemination process

- Working with the project staff and evaluation advisory committee to define what the project means by Tech Prep students

- Designing and using of a high school student survey in May to document the educational and occupational intents of all 11th and 12th grade students in the Consortium as well as their view of Tech Prep and interest in participating.

- Working with the director of institutional research on a study of community college Tech Prep students

- Meeting with the Mt. Hood Regional Cooperative Consortium monthly to update them on the Tech Prep evaluation findings

- Meeting with the Mt. Hood Regional Cooperative Consortium in May, 1994 for their day of planning for the coming year.

2. PROGRAM DESCRIPTION

The Consortium

The Mt. Hood Community College Tech Prep Program Consortium is composed of representatives of Mt. Hood Community College District, the Multnomah Educational Service District, and seven school districts — Centennial, Corbett, David Douglas, Gresham/Barlow, Parkrose, Reynolds, and Sandy Union High. Also represented are a postsecondary propriety school, three postsecondary apprenticeship programs, three businesses, a business/industry association, a labor group, and a representative from the Oregon Department of Education. Mt. Hood Community College District has a total annual enrollment of approximately 27,000 students. The Consortium meets monthly on the second Thursday of each month during the academic year.

The Consortium does not have a governing board or working committees, but it does have active working members. The consortium has a 2.0 person professional staff and a 1.0 clerical staff.

Funding

The Consortium received its Carl Perkins funding through the Oregon Department of Education starting in 1986 and its US Department of Education national demonstration grant of $308,000 in 1993. Last fiscal year the Consortium received a $103,000 title III-E

grant and a $70,000 title II-C grant through the state. In addition, it received a $25,000 planning grant from The Boeing Company.

Business and industry have been active partners in this Consortium by working with students and staff and providing material resources. In working with students, they have provided career awareness opportunities for students in the early phases of Tech Prep, opportunities for students to tour facilities, work-based learning opportunities, and priority in hiring Tech Prep graduates. With staff they have assisted in defining program outcomes, identifying/refining occupational areas, promoting or marketing Tech Prep, supporting staff development activities for counselors and instructors through workplace visits and discussions, and providing speakers for career education days. In addition, they have provided awards or scholarships for teachers, equipment or materials, and space for classes or other activities.

Overall, the Consortium last year spent approximately 60 percent of their budget on general administration, 30 percent on staff development, 5 percent on marketing/promotion, and 5 percent on supplies.

Description of the Tech Prep Program and Population

Under the Mt. Hood Tech Prep model, students are involved in grades 9 to 14 plus opportunities to continue into an apprenticeship or a four-year college program. No single definition of a required core program for all secondary-level Tech Prep students has been implemented by all Consortium members. Five of the seven local school districts have defined a core program for all Tech Prep students.

Although the state has not provided a definition of secondary Tech Prep students, the Consortium members have agreed upon a definition. Students must explicitly elect Tech Prep as a path or take one or more vocational courses. The Consortium's definitions of secondary and postsecondary Tech Prep students were reported in Section 1 of this report.

The school districts in the Consortium began to track transcripted credits into the community college in 1988. Although not all of these students would be considered Tech Prep students, the Consortium director estimates that there were approximately 1,500 Tech Prep students in each of grades 9 to 12 last year. This represents about half of the secondary students.

Of the four-year secondary students, approximately 2 percent are Black, 3 percent are Hispanic, 1 percent are Native American, 2 percent are Asian or Pacific Islanders, and 92 percent are White. Approximately 55 percent are female, 5 percent limited English proficient, 10 percent with handicaps or disabilities, and 15 percent economically and/or educationally disadvantaged.

Efforts have been made to attract all special populations into Tech Prep. There has also been emphasis on attracting students into occupations that are non-traditional for their gender. Males have been recruited into early childhood education, hospitality/tourism, and nursing. Females are invited to enroll in welding, manufacturing, automotive, and forestry technology.

A variety of services or accommodations are being used to access Tech Prep for special populations. These include inclusion of special populations coordinators in the Tech Prep team, materials in the student's native language, use of interpreters, physical access accommodations, special equipment, transportation, child care, and coordination with JTPA programs.

Students in the Consortium explicitly choose between Tech Prep and other programs. In six of the districts, students also choose an occupational cluster. These occupational clusters, articulated between the high schools and Mt. Hood Community College, are accounting, automotive, cable and community television, early childhood education, electronics, engineering technology, entrepreneurship/small business management, horticulture, hospitality/tourism, journalism, manufacturing technology, office technology, and welding technology. These programs have been developed in cooperation with area business and industry representatives to ensure that technical training includes the skills and knowledge required by area employers.

In 1991-92, a total of 252 Tech Prep high school students transcripted professional technical education course credits into Mt. Hood Community College. By 1993-94, the number jumped to 478. Table 1 shows the number of students by occupational area, with the largest being in office occupations and early childhood education. In 1994 a total of 931 credits were transcripted by Mt. Hood Community College.

Table 1
Number of High School Students
Transferring Tech Prep Credits into Mt. Hood

	Number of Students		
Program Area	**1991-92**	**1992-93**	**1993-94**
Office Occupations	77	149	238
Early Childhood Education	70	21	19
Hospitality/Tourism	48	34	28
Computer Science	29	48	38
Work Experience	9	56	64
Manufacturing Technology	7	8	14
Welding	7	9	23
Automotive	5	0	0
Engineering	-	-	16
Graphics	-	-	8
Marketing	-	-	13

The number of high school students transcripting professional technical education course credits into Mt. Hood Community College has increased steadily since 1988-89. Figure 1 shows the increase in students while Figure 2 reflects the increase in terms of the number of credits transcripted.

Figure 1
Number of Students
Transcripting Credit Through Tech Prep

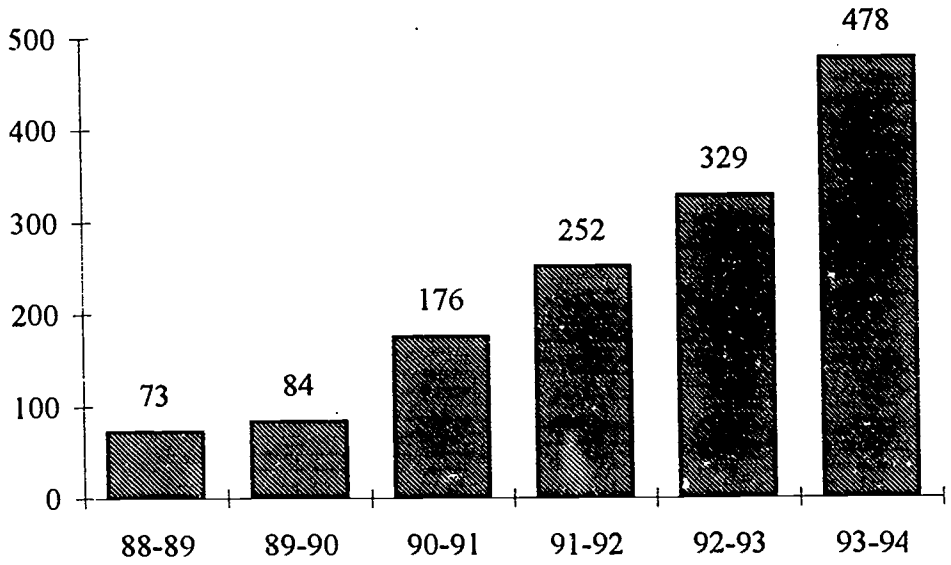
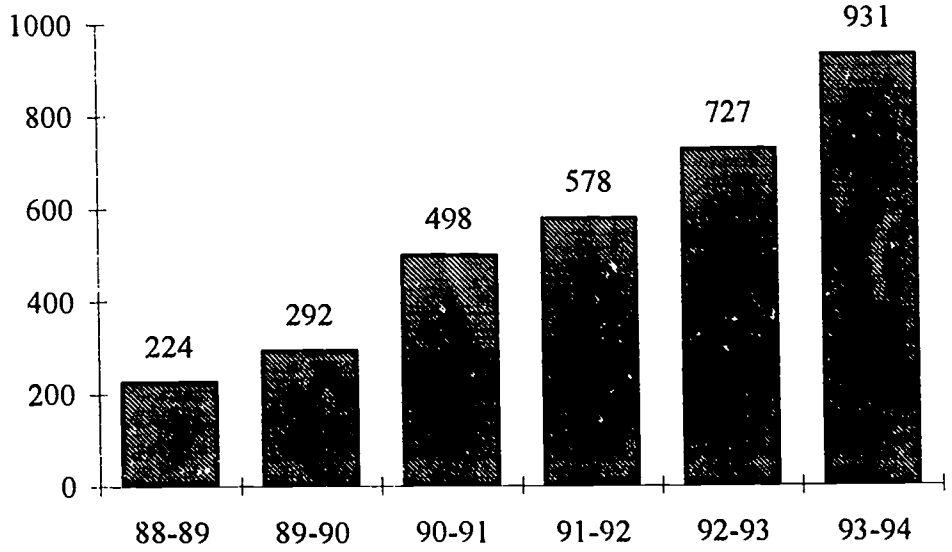


Figure 2
Number of Credits Transcripted Through Tech Prep



The school districts all offer some form of workplace experiences. Table 2 indicates the number of school districts offering each type of workplace experience. The most commonly offered is placement in part-time employment related to a student's occupational program. None of the districts currently offer youth apprenticeship at employer work sites.

Table 2
Number of Districts Offering Various Workplace Experiences

Experience	Frequency
Placement in part-time employment related to student's occupational program	7
Placement in paid part-time employment during the school year as part of a co-op placement	6
Visits to employer work sites as part of student's occupational program	4
Internships	3
Participation in employer-sponsored training/classes	2
Placement in a summer job related to student's occupational program	2

Curriculum Development

Additions or revisions in academic courses have occurred at both the secondary and postsecondary level. Table 3 shows the number of high schools and community colleges engaged in such curriculum revision. As noted, the greatest change was the addition of applied economics.

Table 3
Number of High Schools and Community Colleges
Engaged in New or Substantially Revised Academic Courses

Area	HS	CC
Economics	7	1
English	4	1
Mathematics	3	1
Physics	3	0
Biology	2	0
Chemistry	2	0

Commercially available applied academic curricula are being used in all of the participating high schools and at Mt. Hood Community College. Table 4 shows the number of schools using each applied curriculum. Applied Economics is being used in each high school.

Table 4
Number of High Schools and Community Colleges
Using Commercially Available Applied Academics Curricula

Area	HS	CC
Applied Economics	7	1
Applied Communications	4	1
Applied Mathematics	3	1
Principles of Technology	3	0
Applied Biology/Chemistry	2	0

Substantial changes have also occurred in occupational/technical courses. High schools were engaged in such changes in Agriculture, Applied Science, Business, Engineering Technology, Health and Mechanical/Industrial areas. These changes involved both new instructional methods and more advanced skills. At Mt. Hood Community College changes occurred in Business, Engineering Technology, and Mechanical/Industrial.

Articulation

No written articulation agreements existed between secondary and postsecondary institutions prior to the Consortium's establishment. Seven general articulation agreements and 71 specific articulations agreements now exist. The articulation agreements with Mt. Hood Community College involve the following five elements:

- Identification of secondary courses or competencies for which postsecondary credits will be granted towards a certificate or degree
- Changing the content or competencies covered in postsecondary courses that are part of an occupational sequence to eliminate gaps or duplication
- Defining/changing the content or competencies covered in secondary courses that are part of an occupational sequence
- Granting of advanced standing in apprenticeship programs based on secondary school program completion
- Working with secondary partners to identify a sequence of required and elective courses or competencies at secondary and postsecondary levels to create a four-year program of study.

Articulation agreements have been signed in 15 areas: Accounting, Agriculture/Horticulture, Automotive, Cable and Commercial Television, Computer Applications, Early Childhood Education, Electronics, Engineering Technology (Drafting), Entrepreneurship/Small Business Management, Hospitality/Tourism,

Journalism, Manufacturing Technology, Marketing, Office Occupations, and Welding Technology.

Counseling, Guidance, and Career Development

The Mt. Hood Consortium believe that an effective Tech Prep effort includes involvement of middle schools. Last year, meetings were held at middle schools involving Consortium staff, middle school and high school staff, students and representatives of postsecondary institutions, business, labor, government, local community organizations, and members of the armed forces.

Numerous career development activities were held at the middle school, high school, and postsecondary level. Table 5 lists a variety of career development activities and indicates which are provided by Some (S) or All (A) schools at that level or areas within the Mt. Hood Community College. A total of 51 counselors are available at the secondary level.

Table 5
Career Development Activities at the Middle, High School, and Postsecondary Level Provided by Some (S) or All (A) Schools or Areas within Mt Hood Community College

Career Development Activity	Middle School	High School	Mt. Hood CC
Special career development classes	A	A	S
Career development integrated in academic and/or vocational courses	A	A	S
Individual career development counseling	A	A	S
Special career counseling materials developed specifically for Tech Prep students are used by school counselors	A	A	S
Development of Tech Prep educational plans indicating courses a student will take at the secondary and postsecondary levels	A	A	S
Student access to or use of career exploration software	A	A	S
Trips to employer worksites	S	S	S
Job placement assistance for existing students provided by course instructors	S	S	S
Job placement assistance for existing students provided by guidance counselors	S	S	S
Job placement assistance for existing students provided by special job placement staff	S	S	S

Staff Development

Staff development was one of the most active parts of the Mt. Hood Tech Prep Program this year. The staff development involved many people including: consortium staff; secondary administrators, teachers, and counselors; postsecondary administrators, teachers, and counselors, and representatives of local business/industry. While improvement of job placement assistance received only moderate emphasis, heavy emphasis was placed on the following areas:

- Developing general concepts and strategies for Tech Prep
- Improving integration of vocational and academic instruction
- Developing curricula and instruction to promote hands-on learning
- Promoting cooperation among secondary and postsecondary staff
- Improving career development counseling
- Promoting Tech Prep and marketing it to students/parents
- Evaluating Tech Prep
- Improving business/industry/labor relationships

Student Outcomes

All seven districts in the Consortium have graduated Tech Prep students. The first group to have received articulated credit into Mt. Hood Community College graduated from high school in 1987-88. Approximately 1,500 Tech Prep students graduated last year. At this time we do not know the number who are currently employed. A study is currently underway to determine the number of high school Tech Prep graduates who entered Mt. Hood Community College this year.

Monitoring/Evaluation

Since the Mt. Hood Community College Consortium received special funding this year from the U.S. Department of Education as one of nine Tech Prep National demonstration Centers, the evaluation of this project has received special attention. The external evaluation is being performed by contract to the Northwest Regional Educational Laboratory (NWREL). The NWREL staff are working with the institutional research staff at Mt. Hood Community College to develop a computerized database containing information on past, current, and future Tech Prep students. When the database is implemented, it will include information on academic and vocational courses taken/completed, technical skills/competencies attained, course grades, career counseling services received, level of postsecondary remediation required, program enrollment by occupational area, degrees/certificates received, workplace experiences as part of Tech Prep, postsecondary job placement, and wage data from state unemployment records.

Data collection included interviews with key people, small group discussion with consortium staff and teachers, and written surveys of all 11th and 12th grade students in

each of the seven districts to determine their vocational and educational plans, awareness of Tech Prep, and potential interest in entering specific occupational programs at Mt. Hood Community College.

Areas of Success and Obstacles

Among the areas where Consortium members perceived the most success were collaboration between secondary and postsecondary educators and collaboration between vocational and academic educators. Other success areas cited included developing administrators support, establishing clearly defined Tech Prep objectives, developing articulation agreements, obtaining a high degree of federal support, involving business and industry, networking with other Tech Prep programs, developing increased awareness of Tech Prep in the community, integrating Tech Prep into larger reform efforts, applying TQM, and developing inter-district programs that allow students from one district to take courses offered in other districts.

The greatest obstacle was the lack of staff, time, and money dedicated to Tech Prep.

3. CONSORTIUM STUDENT SURVEY

In May 1993, the NWREL evaluation staff prepared a Mt. Hood Consortium Student Survey that was reviewed by the consortium and project staff. It was then distributed by the regional coordinator to all available 11th and 12th grade students in the Consortium. The intent of the survey was to determine students' educational and vocational plans after high school, vocational programs taken in high school, interest in attending a community college and possible areas of vocational education interest there, familiarity with Tech Prep and perception of it, and whether students were aware of and had applied to have their high school vocational education credits transcripted to a community college. The results of this survey, which was completed by 2,391 students, are shown in a tabulated version in Appendix A.

The 2,391 students completing this survey were evenly distributed by gender and split between 11th and 12th grade. The largest number of respondents came from David Douglas High School. Table 6 shows the breakdown of number and percentage of students across the eight schools.

One year after completing high school the majority of students plan to attend a community college (47 percent), attend a four-year college or university (41 percent), or work part-time (38 percent). The most commonly mentioned jobs were in the areas of marketing, health occupations, and office occupations. Only 31 percent had ever considered a career in a non-traditional occupation. In terms of educational aspirations, 64 percent of the students intended to complete a four-year college degree or higher, while 22 percent planned to complete at least a two-year program.

Table 6
Number and Percentage of Students Responses by High School

School	Number	Percentage (of total respondents)
David Douglas	536	22
Sam Barlow	456	19
Reynolds	442	18
Centennial	329	14
Sandy	222	9
Gresham	166	7
Parkrose	162	7
Corbett	71	3

Students were asked to identify the high school professional technical education courses they have or are taking in high school. The most frequently mentioned course was early childhood education. Table 2 shows the distribution of other courses taken in high school, as well as the percent desiring to follow up with this course of study at a community college. The high school and community college percentages are rather similar; however, the percentages at the community college are generally slightly lower, except in the health occupations where 8 percent were taking them in high school while 12 percent were expressing interest in taking them in the community college. The similarities between the high school and community college are useful to know and suggest a good basis for Tech Prep articulation.

Table 7
Professional Technical Education Courses Taken in High School and Desired in a Community College

Course	Percent H.S.	Percent Com. Col.
Early Childhood Education	12	9
Automotive	9	6
Graphics	9	5
Marketing	9	6
Office Occupations	9	7
Health Occupations	8	12
Electronics	7	7
Hospitality/Tourism	6	6
Building Construction	4	4
Horticulture	1	2

Two-thirds of the students have considered attending a community college. The community colleges identified most often were Mt. Hood (59 percent), Portland (12 percent), Clackamas (8 percent), and others (6 percent).

While two-thirds of the students had thought about attending a community college, only one-third were familiar with the professional technical education courses offered at Mt. Hood Community College. Of those familiar with the professional technical education courses at Mt. Hood Community College, the most frequent sources of information were the school catalog (16 percent), friends (13 percent), and teachers and counselors (10 percent each). Only 7 percent indicated that they had visited Mt. Hood Community College. This suggests that an important recruiting strategy to get high school students familiar with the Mt. Hood Community College program may be to arrange for them to visit the campus.

In this survey only 25 percent of the students had ever heard of Tech Prep. Most of that number felt that Tech Prep either consisted of courses which prepared students for careers in technical fields (14 percent) or it was a professional technical education program that starts in high school and leads to a community college associate degree or beyond (15 percent). High school students in the Seattle School District were also asked about Tech Prep in May. Twenty-eight percent of the 11th and 12th grade students there had heard about Tech Prep. This suggests that many students still need to be informed about Tech Prep.

The last set of questions dealt with transcripting of professional technical education high school course credits into the community college. Fifty-nine percent were aware that their professional technical education classes may count for community college credit, but only 18 percent had ever applied to have the credits transcripted.

A more detailed analysis was made of the 1,135 high school students who indicated an interest in attending Mt. Hood Community College. Table 8 shows the number of these students expressing an interest in particular occupational areas at Mt. Hood. Of this group only 36 percent expressed familiarity with the professional technical education courses offered, 25 percent had heard of Tech Prep, 62 percent were aware that their professional technical education high school classes may count for community college credit, but only 20 percent had applied to have their credits transcripted.

A detailed report will be provided to the project staff identifying by name each student who indicated an interest in attending Mt. Hood Community College. This report will provide the student's school, grade level (11th or 12th), occupational areas of interest at Mt. Hood, and occupational areas studied in high school.

Table 8
Number of High School Students Interested in Taking a Professional/Technical Education Program at Mt. Hood Community College

Occupational Area	Number
Automotive	102
Building Construction	71
Early Childhood Education	170
Electronics	127
Graphics	87
Health Occupations	200
Horticulture	31
Hospitality/Tourism	115
Marketing	102
Office Occupations	130
TOTAL	1135

4. ARTICULATION STUDY

Introduction

In May 1994, Dr. Tom Owens of the Northwest Regional Educational Laboratory in cooperation with Dr. Dan Walleri, director of Research and Planning at Mt. Hood Community College, and Nancy Conrath, a consultant to the community college, conducted an analysis of records of students enrolled in one or more professional technical education courses at Mt. Hood. The intent was to study students who had taken professional technical education courses in high school and had received articulated credit from Mt. Hood for one or more such courses. Comparison group students were selected based on not having transcripted credits, but being enrolled in the same community college professional technical education courses as those who had transcripted credits.

We wished to describe the characteristics of the professional technical education students who had transcripted professional technical education credits as a baseline for measuring future Tech Prep students. The indicators we used were: grade point average at Mt. Hood Community College and the percent of students needing guided studies in reading, mathematics, and/or writing. Other descriptive data we analyzed were: gender, ethnicity, educational goals of the students, and motivation for attending Mt. Hood Community College.

Findings

There were 1550 students for whom transcript data were available from Mt. Hood Community College. Table 9 shows the number of students in each of the three groups by the number of community college credits they had accumulated at Mt. Hood. We decided to eliminate from further analysis those students who had taken less than 12 hours of credit at the college since many had taken only one or no courses. It is interesting to note that both the PTE groups had a higher percentage of students who had taken more than 11 hours of credit.

Table 9
Number of Students by Credits Earned at Mt. Hood Community College
N=1,550

Category of Students	No hours	One to 11 hours	12 to 20 hours	21 or more hours	Total
Comparison	820	432	68	116	1,436
PTE 1	0	11	11	32	54
PTE 2	1	6	6	47	60

For the following tables the following factors apply: (1) The information is based on years 1988-1993; (2) Only students earning a total of more than 12 credit hours were included; (3) PTE1 students are professional technical education students from the following majors General Studies, Criminal Justice Administration, Nursing-PreProf, and Business Administration, (4) PTE2 students were all the professional technical education majors except General Studies which is included in PTE1 (these are the students who traditionally would have been identified as professional technical education students because they were in programs that do not transfer to four-year degree programs); (5) For both PTE categories only those students who were involved in the 2+2 program and actually transcripted credit were included.

Table 10 shows the age distribution of students in the three groups. This was considered important to determine whether the comparison group were substantially older than the other two professional technical education groups. As seen in Table 10, there are some older students in the comparison but 149 students or 81 percent are under 25 years of age.

Table 11 shows the average grade point average for students in the three groups. Those who had not transcripted credits had a somewhat higher GPA than other professional technical education students.

Table 10
Age of Students by Group
(N=279)

	Comparison (N=183)	PTE1 (N=43)	PTE2 (N=53)
17-21	89	36	41
22-25	60	7	11
26-29	12	0	1
30-40	12	0	0
41-50	7	0	0
Over 50	3	0	0

Table 11
Mean GPA by PTE Status
(N=280)

	Comparison (N=184)	PTE1 (N=43)	PTE2 (N=53)
GPA	2.20	1.95	1.80

Differences in gender are shown in Table 12. Students who transcripted their high school professional technical education credits were more likely to be female. This finding has occurred with other Tech Prep programs in other parts of the country. It is not clear exactly why females are more likely to transcript their credits. In at least some of the Mt. Hood Consortium high schools the business and office occupations teachers have been more directive in bringing the forms to be filled out into the classroom for students to complete while other professional technical education teachers have left it up to the individual student to do on their own.

Table 12
Gender Percentages by PTE Status
(N=280)

	Comparison (N=184)	PTE1 (N=43)	PTE2 (N=53)
Female	65	70	85
Male	35	30	15

The ethnic background of the three groups is shown in Table 13. Most of the students in each group are Caucasian with a slightly higher percentage being in the PTE2 group.

Table 13
Ethnic Percentages by PTE Status
(N=280)

	Comparison (N=184)	PTE1 (N=43)	PTE2 (N=53)
American Indian	1	2	0
Black Afro-American	1	0	0
Caucasian	89	88	94
Oriental-Asian	6	7	6
Spanish Surnamed American	2	2	0
Non-US Citizen	1	0	0
Unknown	1	0	0
Other	2	0	0

Upon applying at Mt. Hood Community College, students are asked to identify their educational goals. Table 14 shows the distribution by group. As would be expected, the PTE2 group has the highest percentage who aspire to a 2-year degree while the PTE1 group has the highest percentage aspiring to the 4-year degree. What is interesting, however, is that 15 percent of the PTE2 group want to earn a 4-year degree and 30 percent of the PTE1 group want only a 2-year degree. This suggests that it may be more useful in the future to consider both groups as professional technical education students and not limit professional technical education to only those not intending to go beyond a 2-year degree.

Table 14
Goal Percentages by PTE Status
(N=272)

	Comparison (N=176)	PTE1 (N=43)	PTE2 (N=53)
Take one class	6	0	2
Take a few classes	4	0	0
Earn a 2-year degree	23	30	79
Earn 1-year certificate	2	0	4
Earn GED 3	0	0	0
Earn 4-year degree	58	70	15
Other	7	0	0

Students upon entry into Mt. Hood Community College are also asked to identify their motive for entering the community college. Table 15 shows the results. The largest percentage of the PTE2 students enroll to get a job while the largest percentage of the PTE1 group enroll to explore a career.

Table 15
Motive Percentages by PTE Status
(N=271)

	Comparison (N=171)	PTE1 (N=42)	PTE2 (N=53)
Get a job	16	17	43
To enhance my current job	3	2	0
Get a better job	14	12	17
Personal enrichment	9	5	4
Explore a career	41	62	30
Other	16	2	6

Students entering Mt. Hood Community College take the CPT Placement test in reading, writing and mathematics. Cut scores have been set at 110 in reading, 319 in writing and 17 on the mathematics test A/SK. Students scoring equal to or lower than these cut scores are required to take guided studies classes in the respective areas to prepare them to handle the higher level courses required at Mt. Hood Community College. Tables 16, 17, and 18 show the percentage of students needing guided studies in each of the three areas separately while Table 19 shows those needing guided studies in more than one area. For each of the three basic skills areas those students in PTE2 had the highest percentage needing remediation. The figures for writing are especially high for all groups. Table 19 indicates that 91 percent of the PTE2 group needed guided studies in at least one basic skills area.

Table 16
Percentage of Students Needing Guided Studies in Reading by PTE Status
(N=155)

	Comparison (N=76)	PTE1 (N=35)	PTE2 (N=44)
GS	7	9	20

Table 17
Percentage of Students Needing Guided Studies in Math by PTE Status
(N=155)

	Comparison (N=76)	PTE1 (N=35)	PTE2 (N=44)
GS	13	9	30

Table 18
Percentage of Students Needing Guided Studies in Writing by PTE Status (N=155)

	Comparison (N=76)	PTE1 (N=35)	PTE2 (N=44)
GS	17	20	27

Table 19
Percent of Students Needing Guided Studies in More Than One Area (N=155)

	Comparison (N=76)	PTE1 (N=35)	PTE2 (N=44)
Reading/Math	3	0	14
Reading/Writing	4	9	16
Math/Writing	7	6	14
Reading/Math/Writing	1	0	11
None needed	75	76	55

Tables 20 and 21 show the percent of PTE1 and PTE2 students needing guided studies in each of the three basic skills area for the past three years for which data are available. Analysis was run over the years to see if the pattern was changing over time. Since the numbers are small for 1990 it is more reliable to consider the 1991 and 1992 years. There appears to be no pattern yet. With the comparison group there appears to be a slight decrease in those needing guided studies in writing over the three years from 100 percent to 82 percent.

Table 20
Percentage of PTE1 and PTE2 Students Needing Guided Studies by Year of High School Graduation

	1990		1991		1992	
	PTE1 (N=2)	PTE2 (N=6)	PTE1 (N=12)	PTE2 (N=13)	PTE1 (N=20)	PTE2 (N=24)
Reading	0	50	25	15	0	17
Math	0	50	0	23	15	25
Writing	0	67	25	23	20	21

Table 21
Percentage of Comparison Group Students Needing Guided Studies by Year of High School Graduation

	1990 (N=10)	1991 (N=19)	1992 (N=22)
Reading	10	5	5
Math	20	0	18
Writing	10	11	32

5. EVALUATION RECOMMENDATIONS

The evaluation of this project has produced some important outcomes including the formation of an active evaluation advisory committee, an evaluation design that has been reviewed by the advisory committee and revised, a set of working definitions of high school and community college Tech Prep students, formation of a national review panel of nationally recognized experts in Tech Prep, a comprehensive description of the project and its operations, start-up work on designing an effective student management information system and transcript study, and a survey of almost 3,000 high school 11th and 12th grade students enrolled in professional technical education.

There are three evaluation recommendations that seem important for the future.

1. **More intensive work is needed in increasing the awareness and understanding of Tech Prep among students, staff, parents, and employers.**

Data from the Consortium Student Survey administered to 2,391 11th and 12th grade students in May 1993 indicated that of the students surveyed, only 25 percent indicated that they had ever heard the term "Tech Prep", and only 15 percent thought of it as a professional technical education program that starts in high school and leads to a community college associate degree or beyond.

While it is useful not to make a major distinction between Tech Prep and College Prep, since some students will be qualifying for both, it appears important that students know about Tech Prep and be encouraged, through individual student plans, to think about how they can continue their professional technical education beyond high school into the community college. The Consortium Student Survey recorded student names, schools, and professional technical education areas of coursework for almost 3,000 high school students. It may be useful next year for each school to follow up with these seniors or recent graduates to explain Tech Prep and encourage students to continue their training in community college

2. **There is need to have a better system for identifying professional technical education program completers and Tech Prep students so that next year's evaluation can look at gains in the number of Tech Prep students versus the number of other students.**

A review of the high school SERVE reports completed by the schools suggests that there is a gross underestimation of professional technical education program completers and Tech Prep students. For example, the SERVE report from one advanced marketing class of 11th and 12th grade students indicated that none were in Tech Prep. This appears highly unlikely. Professional technical education teachers know the students in their current classes, but they often do not know what is required of a program completer nor the actual courses in professional technical education that each student has already completed. The Consortium may want to identify a committee of educators to investigate this problem and come up with recommendations that can be tried and assessed next year.

3. **Work should continue on developing a student management information system that includes an analysis of the professional technical education courses completed by each student so that we will have a sound basis for identifying the Tech Prep students.**

The NWREL evaluation staff have held several productive meetings this year with the director of admissions and the director of institutional research at Mt. Hood Community College to determine what student information is available on professional technical education students at Mt. Hood and to decide how that information can be used in the evaluation. These discussions need to continue next year and expand to include representatives of some of the participating high schools. The student MIS should be compatible with the one being developed by the Oregon Department of Education.

APPENDIX A
MT. HOOD CONSORTIUM STUDENT SURVEY
PERCENT (N=2,391) RESPONSES

Gender: *(check one)* Male 51% Female 49%
Grade Level: *(check one)* 11th 51% 12th 49%

High School: *(check one)*	%	N
Centennial	14	329
Gresham	7	166
Corbett	3	71
Parkrose	7	162
David Douglas	22	536
Reynolds	18	442
Sam Barlow	19	456
Sandy	9	222

The following questions are designed to help us prepare high school and community college classes that meet the needs of today's students. Please take a few minutes to complete this survey and return it to your teacher.

1. What do you expect to be doing one year after completing high school? *(Circle one or more numbers.)*

	Percent
Working full-time (35 hours or more)	18
Entering an apprenticeship program	4
Entering an on-the-job training program	4
Going into regular military service or to a service academy	6
Attending a vocational, technical, trade or business school	9
Attending a community college	47
Attending a four-year college or university	41
Working part-time (less than 35 hours)	38
Other (travel, take a break)	9
I have no idea what I'll be doing	4

2. What type of job do you think you will have when you are 30 years old. *(Be as complete as you can.)*

	Percent
Automotive	5
Construction	7
Early Childhood	9
Electronics	2
Graphics	3
Health Occupations	18
Horticulture	16
Hospitality/tourism	4
Marketing	59
Office Occupations	12
Other	66

3. Have you ever considered a career in an occupation that is non-traditional for your gender? (i.e., a male nurse or female engineer) Yes 31% No 69%

4. As things stand now, how far do you think you will get in school? *(Circle the highest applicable number.)*

High School	**Percent**
Less than high school graduation	2
High school graduation only	3
Vocational, trade, or business school after high school	
Less than two years	3
Two years or more	5
College or Community College	
Less than two years of college	4
Two or more years of college (including two-year degree)	22
Finish college (four- or five-year degree)	33
Master's or advanced degree	31

5. Have you taken or are you currently enrolled in any of the following high school professional technical education courses? *(Check all that apply.)*:

	Percent		Percent
Automotive	9	Health Occupations	8
Building Construction	4	Horticulture	1
Early Childhood Educ.	12	Hospitality/Tourism	6
Electronics	7	Marketing	9
Graphics	9	Office Occupations	9
Others(please specify)	25		

6. Have you ever thought about attending a community college after completing high school to continue your training in a professional technical area?
Yes 66% No 34%

If yes, which community college are you likely to attend? *(Circle one or more numbers.)*

Mt. Hood Community College	59
Portland Community College	12
Clackamas Community College	8
Other (please specify)_____	6

7. If you plan to take a professional/technical program in a community college, in what occupational area would you like to receive training? *(Check one.)*

	Percent		Percent
Automotive	6	Health Occupations	12
Building Construction	4	Horticulture	2
Early Childhood Educ.	9	Hospitality/Tourism	6
Electronics	7	Marketing	6
Graphics	5	Office Occupations	7
Others(please specify)	22		

8. Are you familiar with the professional technical education courses offered at Mt. Hood Community College?

   Yes 33% No 67%

   If yes, how did you hear about them? *(Circle all that apply.)*

I learned about them from:	Percent		Percent
School catalog or course listing	16	A counselor	10
Friends	13	Staff at Mt. Hood Community College	5
High school teachers	10	I visited Mt. Hood Community College	6
Other (please specify)	4		

9. Have you ever heard the term "Tech Prep"?

   Yes 25% No 75%

   If yes what do you think **Tech Prep** means *(Circle one or more numbers.)*

A new name for vocational education	3
Courses to prepare you for careers in technical fields	14
A professional technical education program that starts in high school and leads to a community college associate degree or beyond	15
Preparation for a job immediately after high school	3
Courses in computer sciences	1
I'm not sure	7

10. Were you aware that your professional technical education high school classes may count for community college credit? Yes 59% No 41%

    If yes, have you ever applied to have your credits transcripted to a community college?

    Yes 18% No 82%

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THANKS FOR TAKING TIME TO COMPLETE THIS SURVEY.