DOCUMENT RESUME

ED 321 092 CE 055 234

TITLE	Partnerships in Progress. A Report by the Task Force on 2+2 Tech-Prep Curriculum for Hamilton and Clermont Counties.
INSTITUTION	Ohio State Univ., Columbus. Center on Education and Training for Employment.
PUB DATE	Jun 90
NOTE	52p.
PUB TYPE	Reports - Evaluative/Feasibility (142)
EDRS PRICE	MF01/PC03 Plus Postage.
DESCRIPTORS	*Articulation (Education); Cooperative Planning; Cooperative Programs; *Curriculum Development; *Educational Cooperation; Institutional Cooperation; Postsecondary Education; Program Implementation; *Regional Cooperation; School Community Relationship; Secondary Education; Shared Resources and Services; *Technical Education
IDENTIFIERS	Job Training Partnership Act 1982; *Ohio (Clermont County); *Ohio (Hamilton County)

ABSTRACT

This document describes the partnerships to be forged among regional schools, colleges, and Job Training Partnership Act (JTPA) agencies to offer the youth of Clermont and Hamilton counties in Ohio educational experiences leading to a high school diploma and the level of beginning technician, or an associate degree and the level of master technician. An introduction describes the counties, including postsecondary education institutions, secondary education districts, JTPA agencies, and current articulation agreements. Chapter 2 describes how the new plan of partnerships is to be designed and implemented, including how overall leadership would be provided, the development of curricula, the conduct of an information campaign, and the development of a student evaluation plan. Chapter 3 is on program evaluation. Chapter 4 provides timelines and an estimated budget. Chapter 5 outlines expected outcomes of the planned curricula, including their impact on the teaching and learning process, on the relationships among partners, and on students' awareness of the workplace. The document contains 29 references. (CML)

Partners in Progress

A Report by the Task Force on 2+2 Tech-Prep Curriculum for Hamilton and Clermont Counties

The Task Force on 2+2 Tech-Prep Curriculum for Hamilton and Clermont Counties

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Foreword

We look with excitement at the prospects offered to youth and adults of Hamilton and Clermont counties through a regional approach to establishing technical-preparatory partnerships. The intensive work of our regional school-college-JTPA partnership has yielded a thoughtful, workable approach to providing coherent, student-centered educational experiences leading to a high school diploma and the level of beginning technician, an associate degree and the level of master technician, and a foundation of academic and technology skills appropriate for a lifetime in the world of work.

More than developing a menu of articulation agreements, technical-preparatory programs provide community-wide partnerships between and among all those who have a vested interest in preparing youth and adults for work in technical career fields.

Such partnerships offer the students real efficiency during their years in school, a smooth transition from one educational level to another, advanced placement in postsecondary programs, the applied academics and technological awareness necessary for success, and the best chance for higher wages and enhanced employment security. And those of us in public education, the private sector, JTPA, and the lay public are talking and sharing across institutions, agencies, and artificial geographic barriers.

Planning and building a technical preparatory partnership is hard work, exciting work--and we look forward to continued, thoughtful planning and implementation.

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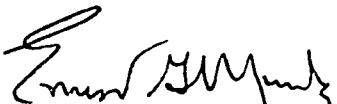

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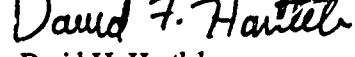

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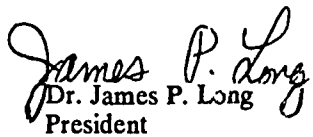

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Chapter One

Introduction

This plan for the development of regional tech-prep curricula in Hamilton and Clermont counties has grown out of the formation of a regional task force in July 1989. The plan reflects the relationships developed among the member institutions represented on the task force and work facilitated for the task force by the Center on Education and Training for Employment, The Ohio State University. The task force has met monthly since its inception; various member institutions of the task force have hosted the meetings. Since the original formation of the task force, intervening variables have arisen to highlight the need for the development of such tech-prep curricula. One is the realization by task force members of the extent to which they need to *market* both the concept of technical preparation and their articulated programs--to counselors, to teachers, and to students. In addition, the task force agreed to attend as a group a national conference on technical preparation in early March 1990. Attendance at that conference reinforced the task force's interest and direction.

The enactment of Amended Substitute Senate Bill 140 has been, in effect, a clarion call for educational improvement. Numerous provisions of the bill point either directly or indirectly toward 2+2 tech-prep curricula for vocational and technical education. Applied academic skills, for example, are one of the primary emphases of the bill. The bill calls for the implementation of competency-based education programs and testing programs in reading skills, language arts, and mathematics. It requires the infusion into vocational curricula of more stringent science, mathematics, English language arts, and technology components for two purposes--to prepare students for the technological workplace of today and to prepare students to accommodate the fast-paced and continual technological changes expected to occur in the workplace of tomorrow. In addition, the bill addresses the efficiency and effectiveness of educational delivery: Are the responsibilities of secondary and postsecondary programs clearly defined? Are they geared to meet the needs of today's employers, and are they set up to adapt to the changing needs of tomorrow's employers? Do secondary and postsecondary programs duplicate services? Is a clear sequence provided, with postsecondary programs building on foundations provided in secondary programs? Does maximal, effective articulation exist? Are resources effectively shared? Are vocational and

technical graduates genuinely provided well-defined, broad career options? Are there effective school-business partnerships in existence that might serve as models across the state? The concept of 2+2 tech-prep curricula can play a key role in addressing many of these provisions; indeed, it is expected that the Action Plan for Accelerating the Modernization of Vocational Education in Ohio, under development by the state Division of Vocational and Career Education, will translate these and other provisions into clear, measurable goals for achievement.

Finally, the reauthorization of the Carl D. Perkins Vocational Education Act will most likely call for specific attention to 2+2 technical preparation programs nationwide. Hamilton and Clermont counties desire to operate as a regional consortium for technical preparation and intend to be prepared for incentives through federal funds.

Background

Hamilton and Clermont counties are two of the seven Ohio, Kentucky, and Indiana counties that make up the Cincinnati Primary Metropolitan Statistical Area (PMSA). Hamilton County is located in the extreme southwestern corner of Ohio, and Clermont County is located immediately to the east on the Ohio River. Recent comprehensive demographic information on the two counties and on the state as a whole is presented in table 1.

As can be seen, the two counties differ from each other and from the state as a whole in some significant ways. First, Hamilton County is much more heavily urbanized and populated than Clermont, even though both counties have approximately the same land area (Hamilton County, 412 square miles; Clermont County, 456 square miles). Likewise, the racial mix in the two counties is quite different, reflecting a sociological trend of some long standing: white flight to the suburbs. Interestingly, Clermont County also has a considerably higher ratio of men to women than does Hamilton.

In both racial and gender mix, Ohio as a whole is about midway between the two counties. Statistics for Ohio as a whole also lie between those for the two counties in economic areas: the percentage of persons below the poverty level and per capita personal income. In both cases, Hamilton County shows the highest figure and Clermont, the lowest. The figures for Hamilton County also show, on average, consistently higher educational attainment than those for Clermont County; once again, Ohio lies in the middle.

Finally, both counties show statistics below those for the state as a whole in two areas: unemployment rate and per capita local expenditure for education. The unemployment rate for Hamilton County is significantly lower than for the state, although the rate for Clermont County approaches the state rate rather closely. Finally, both counties spend less local money per capita for education than the state average.

TABLE 1

DEMOGRAPHICS: 1986

	Hamilton County	Clermont County	Ohio
Estimated population	865,100	140,600	10,752,000
White	79.15%	98.71%	88.84%
Black and other	20.85%	1.29%	11.16%
Hispanic	0.63%	0.46%	1.11%
Male:female ratio	89.7:100	97.8:100	93.2:100
Educational attainment (age 25 and older, 1985)			
12 years or more	65.0%	61.3%	67.0%
16 years or more	18.7%	10.4%	13.7%
Public school enrollment			
1986-87	125,837	27,525	1,830,301
1980	139,978	27,961	2,029,858
Per capita local expenditure for education (1984)	$438	$428	$445
Civilian labor force	448,431	71,098	5,234,000
Number of unemployed	27,520	5,644	426,000
Unemployment rate	6.1%	7.9%	8.1%
Persons below poverty level	11.3%	8.1%	10.3%
Per capita personal income	$13,925	$10,773	$12,326

SOURCE: U.S. Bureau of the Census. *County and City Data Book, 1988.* A Statistical Abstract Supplement. Washington, DC: U.S. Government Printing Office, 1988.

Table 2 presents a snapshot of the employment situation in the Cincinnati PMSA from 1979 through 1995 (projected). As can be seen, trends already evident in 1986 are projected to continue through 1995. As has been the case since 1979, the percentage of jobs available in goods-producing industries will continue to decline, although the decline has begun to level off from 1979 figures. In particular, manufacturing industries as a whole will experience a net loss in jobs, with a large loss in durable goods manufacturing being slightly offset by a small increase in nondurable goods manufacturing. The greatest increases in jobs, both in percentage and actual

TABLE 2

INDUSTRY EMPLOYMENT TRENDS AND PROJECTIONS, 1979 TO 1995

	Employment (in thousands) 1979	1986	1995	% Change 1979-1986	% Change 1986-1995
Goods-producing industries	200.9	174.5	170.2	-13.1	-2.5
Mining	0.4	0.4	0.4	0.0	0.0
Construction	27.4	26.?	27.2	-4.4	3.9
Manufacturing	173.1	147.9	142.6	-14.6	-3.6
Durable goods	98.7	82.2	76.7	-16.7	-6.8
Nondurable goods	74.5	65.7	66.0	-11.8	0.4
Service-producing industries	406.5	476.7	551.4	17.3	15.7
Transportation & utilities	34.2	33.9	35.8	-0.9	5.5
Trade	140.0	165.5	185.4	18.2	12.0
Financ[illegible] insurance & real estate	32.1	37.9	43.4	18.1	14.5
Services	117.4	154.6	197.8	31.7	28.0
Government	82.8	84.8	89.0	2.4	4.9
Total	607.4	651.2	721.5	7.2	10.8

SOURCE: Ohio Bureau of Employment Services. *Labor Market Projections: Cincinnati PMSA.* Ohio Labor Market Information series. Columbus, OH: Ohio Bureau of Employment Services, Labor Market Information Division, n.d.

number, will continue to occur in service-producing industries. The information presented in table 3 on the fastest growing and declining occupations, based on actual figures for 1986 and projections for 1995 for the PMSA, reinforces this picture of a changeover from a goods-producing to a service-producing economy.

TABLE 3

FASTEST GROWING AND DECLINING OCCUPATIONS

Code	Occupational Title	Jobs 1986	Jobs 1995	% Change
Fastest Growing Occupations				
28305147	Paralegal personnel	210	330	57.1
66002451	Dental assistants	980	1,490	52.0
89921703	Dental laboratory technicians	270	410	51.9
32105197	Dentists	580	880	51.7
32908222	Dental hygienists	610	910	49.2
66005452	Medical assistants	820	1,200	46.3
55105335	Medical secretaries	1,300	1,890	45.4
66008453	Nursing aides and orderlies	7,470	10,810	44.7
32308205	Physical therapists	280	400	42.9
32511214	Physician assistants	400	570	42.5
Fastest Declining Occupations				
91317720	Forging machine setter/oper., M/P	190	120	-36.8
55302338	Stenographers	960	660	-31.3
92947799	Painters, transportation equip.	280	200	-28.6
97308869	Rail yard engineers, dinkey oper.	110	80	-27.3
97317872	Railroad brake, signal, switch	340	260	-23.5
85726576	Teleph. station install. & repair	470	360	-23.4
91321721	Machine forming operators, M/P	1,500	1,160	-22.7
87714630	Rail-track laying equip. oper.	310	240	-22.6
91117713	Machine tool cutting oper., M/P	1,930	1,500	-22.3
97302867	Railroad conductors, yardmasters	270	210	-22.2

SOURCE: Ohio Bureau of Employment Services. *Labor Market Projections: Cincinnati PMSA*. Ohio Labor Market Information Series. Columbus, OH: Ohio Bureau of Employment Services, Labor Market Information Division, n.d.

Postsecondary Institutions

Five postsecondary institutions are located within Hamilton and Clermont counties and have collaborated in developing this plan for regional tech-prep curricula. One of the five is a state technical college; the other four

are degree-granting components of the University of Cincinnati. Each of the five institutions has its own specific situation and needs; each serves a somewhat different clientele as well.

Cincinnati Technical College. Located almost in downtown Cincinnati, Cincinnati Technical College is one of Ohio's sixteen state technical colleges. Cincinnati Technical College grew out of grades 13 and 14 offered by the Cincinnati Public Schools. It currently offers 44 two-year degree programs and several one-year certificates in business, engineering, and health technologies. The college is the area's largest provider of graduates in two-year health programs; it is a co-op institution, and students spend alternating terms working in area businesses and industries while completing their degrees.

The student population at the college is diverse. There are approximately 4,550 students on the commuter campus, with an average age of 26. Half the student body is female, and approximately 16 to 17 percent are minorities. The students come from the area of Hamilton County and the Cincinnati Public Schools in approximately equal numbers; the college also draws substantial numbers of students from the surrounding rural counties. The students are generally career-oriented, and few go directly to four-year degree programs upon graduation. The current job placement rate approaches 98 percent for graduates of programs.

Change and expansion are in the air at Cincinnati Technical College. Under the leadership of a new president, Dr. James P. Long, CTC is examining various means to market itself more aggressively in the community.

University College, University of Cincinnati. University College is a two-year, degree-granting component of the University of Cincinnati and is located on the main campus of the university--a unique situation. University College is an open-admission college with the dual role of both transfer programs and technical programs. On the one hand, it accepts students who are not immediately eligible for enrollment in one of the university baccalaureate programs and prepares them for eventual transfer to a four-year college. On the other hand, it also enrolls students in its own two-year associate degree technological programs. Thus many of University College's programs both offer a two-year associate degree and lead directly to a four-year baccalaureate degree in the university.

University College has an optimum operational cap of 3,100 students, set by university budget constraints. However, enrollment generally exceeds the cap and is currently at 3,400. Similarly, the college is a day college; night classes are the province of the University's College of Evening and Continuing Education. Approximately 67 percent of students are in transfer programs and just over 30 percent in technical programs. Approximately 25 percent of University College's students are minority students; as in most institutions across the country, enrollment of black males is declining in particular. Approximately 12 percent of students are nontraditional--that is, over age 25.

For the future, University College sees its greatest growth potential in the service field, especially in health occupations and community service areas such as physical therapy, child care, social services, gerontology,

and criminal justice. High-technology areas are expected to remain relatively constant. University College is eager to align itself for the future that it sees.

OMI College of Applied Science, University of Cincinnati. Originally founded as the Ohio Mechanics Institute in 1828, the OMI College of Applied Science (OCAS) remained a private organization until 1969, when it became one of the university's 16 colleges. Unlike University College, however, OCAS is not located on the university's main campus. Almost exclusively an institution for engineering technology, the college offers two-year associate degree, four-year baccalaureate degree, and two-year distance learning programs. The four-year baccalaureate degree program was initiated only in 1974, in recognition of the growing gap between the two-year associate degree in engineering technology and the traditional four-year bachelor of science degree in engineering. In addition, OCAS offers night courses in such technical trades as cabinetmaking, welding, tool and die making, computer-aided drafting (CAD), and stationary engineering.

For the current academic year, OCAS has approximately 1,900 students enrolled in its degree, distance learning, and night programs. The average night student is 30 years old; the average day student, 19. Thus, the college really serves two diverse student groups with two separate faculties. Day students are currently drawn from seventeen states; only a small percentage come from Cincinnati Public Schools and a sprinkling from secondary vocational programs. The latter students typically receive a core curriculum and then move into their technical specialty.

The original private, autonomous nature of the college and the fact that it operated as a high school for some years early in this century still affect the public's perception of OCAS. Indeed, one local educator, a long-time Cincinnati resident, remarked that she grew up near the OCAS campus and "never thought the sign was real." To correct such misperceptions, OCAS is now assuming a posture of greater visibility in the community, sponsoring such public events as a high school chemistry workshop and a technical communications conference. Along with this new posture came OCAS's move last year to a new, much superior campus.

Raymond Walters College, University of Cincinnati. Named after the longest-tenured president of the university, Raymond Walters is another of the two-year degree-granting components of the university. It is located on a suburban commuter campus some miles from the main university campus. Most of the college's 49 different program options lead to an associate degree; 24 are oriented toward transfer into one of the university's baccalaureate programs, while another 25 are career-oriented. In addition, 12 professional certificates are offered for students who already have baccalaureate degrees. College personnel anticipate future growth in both technical and transfer programs, particularly among students from the northern areas of Greater Cincinnati.

The student body typically numbers around 4,000 students--4,100 for fall 1989 and 3,900 for winter 1990, for example. Students range from traditional high school graduates to adults in retraining; the average age is 27. Approximately 60 percent of enrollments are technical students and 40 percent are transfer students. Roughly one-third of students attend day classes, one-third night classes, and the final third a combination of day and night.

The current mix of 65 percent female and 35 percent male students has been fairly constant over the past several years. The student body also includes approximately 9 percent minority students; blacks are the largest single minority at 6 percent of the entire student body. Two factors are felt to contribute to this specific mix of students: first, the campus's suburban location and on-campus day-care center are a positive draw for women in retraining who have children; second, since the campus is not on a bus line, access is more difficult for economically disadvantaged minority students from the inner city area. The college is actively pursuing ways to make the campus more accessible.

Clermont College, University of Cincinnati. The newest of the two-year degree-granting components of the University of Cincinnati, Clermont College was founded in 1972. Located on a rural commuter campus some twenty-five miles east of Cincinnati, Clermont College in is also an open-access institution offering associate degrees for the first two years of a baccalaureate program in addition to technical career programs leading to degrees and certificates.

Clermont has approximately 1,200 students--60 percent male and 40 percent female--with an average age of 27. These students benefit from Clermont's flexible scheduling and off-site offerings; about a third choose day classes, a third prefer evening classes, and the remaining third enroll in various combinations of day, evening, Saturday, and off-site classes.

While parts of Clermont's service area are rapidly becoming urbanized, large sections remain rural. Clermont County is the westernmost Appalachian county in Ohio and faces many of the problems endemic to the Appalachian region, including a lack of emphasis on education. In supplying educational services, as well as personal and cultural enrichment, Clermont College faces a challenge: How can a college, created by a university whose mission is to serve society, survive, thrive, and prosper when its own mission is to serve its community?

Secondary Districts

Five secondary districts serving Hamilton and Clermont counties are involved in the development of this technical-preparation plan as well. Like the postsecondary institutions, each of the secondary districts has its own unique situation and needs arising from the nature of the district and the population it serves. The districts range from a large-city district to local districts and joint vocational school districts.

Cincinnati Public Schools. The Cincinnati Public Schools currently serve 52,000 students in 65 elementary schools, 10 middle schools, and 11 high schools. The overall budget for the system is in excess of $300,000,000, of which vocational and continuing education accounts for approximately $21,000,000.

Cincinnati Public Schools operate a wide variety of vocational and adult education programs from five major centers--Aiken, Taft/Queen City (which operate several satellites), Western Hills, Withrow, and Woodward (which is a comprehensive high school)--and will shortly open a sixth, Hughes. Programs range from safety services and law enforcement to electronics, masonry, and child care. In addition, various specialty programs are offered: commercial art and technical theater at the School for Creative and Performing Arts, natural resources management (zoo animal care) at the Cincinnati Zoo, an inland waterways program at the Peter H. Clark Academy, and health/fitness and other programs at the Cincinnati Academy of Physical Education. In addition, an occupational work experience program is offered, as well as occupational work adjustment programs for 14- and 15-year-olds. Many regular vocational programs offer co-op work experience.

Approximately 4,000 students are enrolled in 290 vocational education units in the system. Reflecting demographic trends nationwide, approximately 60 percent of students are black and 40 percent white; the system operates under a court-mandated desegregation plan centered on the use of alternative, or magnet, schools. Students may enroll in any vocational program regardless of their residence, although enrollments must not upset the racial balance of the school. In rough terms, 80 percent of the vocational education students in the district could be considered economically or academically disadvantaged. In addition, there are significant numbers of Appalachian students in certain areas of the city. About one in four Cincinnati vocational education students goes on to further education.

Areas of concern in Cincinnati Public Schools are representative of those of many large-city school districts. The district is anxious to attain an equitable desegregation of its schools; vocational program operators strive, with the assistance of business and industry partners, to keep abreast of fast-paced technological change; and many educators see a vocational or career orientation as one possible means of keeping dropout-prone students in high school until graduation.

Northwest Local School District. The Northwest Local School District occupies a 54-square-mile area in the northwest part of Hamilton County. The biggest local school district in Ohio, Northwest currently serves some 10,500 students. The population of the district is a socioeconomic mix; practically all points on a scale from affluent bedroom communities to rural conditions are represented. The district operates two career centers, Colerain and Northwest, each paired with an academic center. Programs include 16 two-year job training programs, four occupational work experience programs, and two one-year co-op programs for seniors only.

The district's two career centers typically enroll 30-40 percent of the district's eligible high school population. Approximately 90 percent of vocational students are white and 10 percent black, 50 percent male and 50 percent female. Follow-up data indicate that the great majority of students go directly into the work force. The highest proportion of students going on immediately to higher education come from Northwest's marketing education senior co-op program; such students typically pursue baccalaureate degrees in marketing or some other business area.

The district prides itself on the close relationships it maintains with local employers, who are heavily involved in advisory committees for each of the vocational programs; furthermore, program personnel conscientiously use the input they obtain from advisory committee members. In addition, teachers of senior students receive up to ten half-days of released time per year for personal contact with employers (for example, for making co-op arrangements), which strengthens existing relationships and provides the opportunity to build new ones.

Great Oaks Joint Vocational School District. Celebrating its 20th anniversary this year, Great Oaks serves as the vocational department for a total of 35 school districts in the Greater Cincinnati area, part of Clermont County, and Highland, Clinton, and Fayette counties. Great Oaks operates a mix of programs: two-year full-time co-op programs for grades 11 and 12; one-year full-time co-op programs for grade 12; a new differentiated program, in which students spend a half-day at Great Oaks for lab and practical experience and the other half-day at their home high school for applied academic and comprehensive course work; noncredit evening programs for adults; and customized technical, basic skill, and displaced worker training programs for local industry.

Current high school enrollment at Great Oaks is slightly over 3,000 students, of whom 2,500 are in full-time programs at one of the four Great Oaks campuses (Diamond Oaks, Laurel Oaks, Live Oaks, and Scarlet Oaks). The student body, comprising roughly 20 percent of the eligible high school population, is approximately 60 percent male and 40 percent female, with 15 percent minority students. From 90 to 95 percent of Great Oaks students enter the world of work immediately upon program completion, with the remaining 5 to 10 percent going on to higher education; in addition, follow-up studies indicate that a considerable number of students obtai further education after working for some period of time.

Perhaps the greatest challenge facing Great Oaks is one common to secondary vocational education: the low value assigned to vocational education by potential students, parents, and other educators. In the minds of many, vocational education is still a low-status, dead-end avenue and cannot lead to college or further education of any kind. Home school counselors, traditionally unenthusiastic about vocational programs, have begun to consider career orientation as a possible preventive for dropout-prone students. This approach does, however, involve some risk for Great Oaks and other vocational programs: they might receive the blame if the career orientation intervention is applied too late and students drop out in spite of it.

U.S. Grant Joint Vocational School District. U.S. Grant serves the Williamsburg, Bethel-Tate, Felicity, and New Richmond school districts in the southern and eastern portions of Clermont County, abutting Cincinnati and the Cincinnati Public Schools, the Great Oaks Joint Vocational School District, and West Clermont Local School District. The district served by U.S. Grant is fairly small and includes a mix of suburban and rural areas. Socioeconomically, the district is fairly uniform, with a healthy financial base and a population that is beginning to get younger again. U.S. Grant offers 13 secondary vocational programs and four full-time adult programs.

Approximately 350 secondary students are enrolled at U.S. Grant, of whom 60 percent are male and 40 percent female. Furthermore, about 2,300 adults enroll per year in U.S. Grant's adult courses, of whom typically 70 percent are female and 30 percent are male.

U.S. Grant offers secondary programs in cosmetology, marketing, business and office, and five heavy trades. The school is currently moving toward discrete classes in applied math and sciences team-taught by academic and technical instructors. Customized training and upgrading programs are also provided for local employers in many areas; such areas as software programs and business supervision and management are in particular demand.

West Clermont Local School District. The West Clermont Local School District covers 54 square miles in the western portion of Clermont County. Once a primarily rural area, the district is now largely suburban and residential in character. The district serves some 8,500 students from kindergarten through grade 12 in 13 schools. Current statistics indicate that approximately 83 percent of all students in the district complete the full four-year high school program.

The West Clermont Career Center offers vocational education programs to students from the districts two high schools, Amelia High School and Glen Este High School. The career center is a modern, attractive facility with up-to-date laboratories and equipment for ten two-year vocational programs, four one-year co-op programs, and two programs for special students. In addition to vocational program faculty, the career center has academic faculty, a guidance staff, a reading coordinator, and a special education coordinator; likewise, the center houses a school library, a consumer education resource center, and a school cafeteria. A teaching staff of 31 serves approximately 400 students.

JTPA Agencies

Also relevant to the development and implementation of technical-preparatory curricula are two local agencies administering programs under the Job Training Partnership Act (JTPA). Each of the two agencies serves one of the two counties involved.

Private Industry Council of the City of Cincinnati and Hamilton County. The Private Industry Council (PIC) for Cincinnati and Hamilton County operates through two administrative entities, the City of Cincinnati Employment and Training Division and the Hamilton County Employment Training Agency. Programs address the needs of the PIC's two major customers--residents without jobs and employers with job opportunities--and range from occupational skill training in more than fifty areas, work experience, on-the-job training, and tryout employment to basic education, pretechnical education, oral communication, preemployment skills, and a job search club. In addition, specific programs serve displaced homemakers, dislocated workers, and older workers.

During the program year July 1, 1988, to June 30, 1989, over 7,200 individuals were served through PIC programs; of these, over 1,125 were placed in permanent unsubsidized jobs and over 3,500 youths secured summer employment. Overall, among City of Cincinnati clients, 56 percent were female and 44 percent male; 84 percent were black or other minority races and 16 percent white; 68 percent were youths age 16-21 and 32 percent adults age 22 or over. Hamilton county figures were somewhat different: 58 percent of those served were male and 42 percent female; 58 percent were white and 42 percent black or other minority races; 71 percent were youths age 16-21 and 29 percent adults age 22 or over.

Occupational skill training programs are offered at a number of training centers, among them Great Oaks, Taft/Queen City, Cincinnati Technical College, and the University of Cincinnati. Programs cover a spectrum from account clerk and automated office skills to culinary arts and dietary cuisine, machine operations and machine trades, licensed practical nurse and nurse's assistant, and truck driver.

Employment and Training Center of Clermont County. The Employment and Training Center of Clermont County is one of two administrative entities through which the Clermont/Warren Private Industry Council operates. Industrial growth in the two-county Service Delivery Area (SDA) 12 is on the increase and has been for some time, resulting in significant local employment opportunities. However, many residents of both counties lack the specific job skills and job-seeking abilities needed for available employment. Consequently, the Employment and Training Center collaborates fully in working to achieve the twofold mission of SDA 12: to train and retrain economically disadvantaged and low-income individuals for the local job market and to help the business community meet its needs for qualified, skilled employees.

In order to accomplish this mission, the Employment and Training Center operates a variety of programs. Classroom skills training is conducted in both public and private educational institutions, providing occupational skills in areas from allied health and sciences to aviation, culinary arts, transportation, and basic skills remediation. Preemployment skills training prepares clients to seek and obtain jobs, with an emphasis on the personal, social, and communication skills critical to effective interviewing. On-the-job training provides actual work experience in entry- or medium-level job positions for periods as long as six months. The employment skills enhancement program offers clients the means to refine and further develop existing job skills. Finally, work experience and youth competencies programs focus on the employment training needs of youths, providing actual work experience during both the summer and the school year and instruction in job-seeking and job-keeping.

In program year 1989 (July 1, 1989, to April 30, 1990), the Employment and Training Center served a total of 477 clients through its various programs. Of these, slightly under 60 percent were female and slightly over 40 percent male. Approximately 58 percent were age 22 or over, while approximately 42 percent were age 16 through 21. Reflecting demographic statistics for the county as a whole, almost 98 percent of all clients were white and slightly over 2 percent were black.

Current Articulation Arrangements

Although the task force defines *technical preparation* more broadly and comprehensively than *articulation*, it seems instructive to review the status of articulation in the region. Over time, a good deal of work has been done to develop articulated programs. Both secondary and postsecondary partners are aware of the possibility of articulation and the need for it. In fact, there are a number of articulation agreements signed and in force between secondary districts and postsecondary institutions. In addition, considerable time and effort have been spent in putting in place necessary curricular adjustments. However, existing agreements have not led to significant results. In effect, although the agreements exist, they are little used: very few students take advantage of the opportunity presented to shorten the time they spend in training in the postsecondary institution.

Perhaps one reason that such agreements are little used is that schools are forced to rely on school guidance counselors to inform students about articulated programs. Unfortunately, some guidance counselors continue to assign a low value to vocational and technical education and consequently do not promote enrollment in articulated programs as much as they might.

In addition, marketing has been a significant part of the problem. Schools have not aggressively promoted enrollment in articulated programs among the general public; as a result, potential students, and their parents, may be unaware that such programs exist, much less that they confer significant benefits on students.

Interestingly, four of the five postsecondary institutions--the four components of the University of Cincinnati--have considerable experience in articulation between two-year and four-year postsecondary programs. In all four university colleges, two different kinds of clear and specific programs are sketched out for students. On the one hand, some students essentially need remediation before they can gain admittance to one of the university's four-year degree programs. On the other hand, many students pursue a two-year associate degree that they consider to be terminal at the moment; at the same time, however, they expect their associate degree curriculum to be carefully designed so that it will fit right into an appropriate four-year degree curriculum if they later decide to pursue the higher degree.

The Need for New Directions

All in all, the interface between secondary and postsecondary programs in Hamilton and Clermont counties needs to be considerably enhanced. The articulation arrangements currently in place are largely ineffective. For the most part, they lead neither to a shortening of the total time that students spend in training programs nor to an increase in the knowledge and skills they possess upon completing training. Neither willingness nor motivation is lacking in the agents involved, secondary or postsecondary.

The mandates in Amended Substitute Senate Bill 140, the pending reauthorization of the Carl Perkins Act, and the goals in the Action Plan for Accelerating the Modernization of Vocational Education in Ohio merely clarify and reinforce the need for improvement that already exists. Vocational and technical education in Hamilton and Clermont counties must adapt to the changing nature of the workplace and the changing needs of employers. Efficient and effective secondary and postsecondary programs must provide students not only with the occupational skills needed to function in the workplace today but also with the foundation of applied academic and technology skills that they will need to continue to function in the workplace tomorrow. What is called for now is a fresh start on technical-preparatory curricula--a renewed effort based on the latest conceptual models of demonstrated effectiveness. Specifically, such a new effort must include mechanisms to ensure that knowledge of regional 2+2 tech-prep curricula is widely disseminated, that both students and educators appreciate the benefits of enrollment in the tech-prep programs, and that the time and effort invested in developing sophisticated 2+2 tech-prep curricula result in outcomes of value: workers trained effectively and efficiently to meet the needs of the workplace and society today.

Chapter Two

A Plan for Tech-Prep

The specific plan proposed is founded on an all-important assumption: the primary purpose of a 2+2 tech-prep curriculum, like any other educational process or product, is to benefit the student. A given plan may well benefit the educational institutions involved as well, but the student and his or her needs are paramount. Given this assumption, it is proposed to develop *regional* 2+2 tech prep curricula; these curricula will be implemented by all secondary districts and postsecondary institutions in the two-county region that offer appropriate programs.

In this way, the greatest number of students will be able to enjoy the outcome of the curricula developed: effective, efficient training for the high-technology jobs of today and tomorrow. Students will not be constrained in their choice of postsecondary institutions because their secondary district only offers a tech-prep program in conjunction with a single postsecondary institution. Instead, their secondary school experience and credentials will be transportable to any of the five postsecondary institutions in the two counties. Such transportability should be of particular value to economically disadvantaged students and JTPA clients, whose choice of a postsecondary institution may be constrained by the availability of public transportation, for example. Likewise, adult women with children who seek retraining will be more likely to find the program they need at a postsecondary institution that offers child care.

Furthermore, the student's need for immediate and lifelong career skills directly drives the curriculum design process. Students need and want preparation for entry into the world of work, some at a beginning level and others at a more advanced level. In addition, they need preparation for a lifetime in the technological workplace of the future. The 2+2 tech-prep curriculum design provides students with training in specific occupational competencies appropriate for either beginning or advanced job positions. Likewise, it provides students with a core of applied academic competencies in the areas of math, communication, science,and

technology that will both enhance their occupational competence and allow them to keep abreast of the ever-changing technology of work.

Specifically, the task force proposes these objectives for its plan to develop regional 2+2 tech-prep curricula:

- o Provide overall leadership in the development and implementation of regional 2+2 tech-prep curricula
- o Develop regional 2+2 tech-prep curricula for selected program areas
- o Conduct an information campaign
- o Develop a student evaluation plan

The individual tasks and activities planned to accomplish each of these objectives are presented in the work breakdown in table 4. Additional details are presented in the following narrative.

Provide Overall Leadership

A crucial component of successful 2+2 tech-prep efforts is leadership. Some person or persons must give the lead and point the way, set policy, make decisions, promote the concept, and involve others in implementing it. As shown in the foreword on p. vii, the chief officials of the agencies involved in this regional effort endorse and support the technical preparation planning initiative; such support from the top is essential.

Establish tech-prep leadership. The current ad hoc task force will be reconstituted as the tech-prep executive committee, with expanded membership. Currently, the task force consists of one representative from each of the participating secondary districts and postsecondary institutions and from the Cincinnati/Hamilton County JTPA agency. These additional members will be added to ensure input from all appropriate perspectives:

- o A representative of the Employment and Training Center of Clermont County
- o Two representatives of the guidance community, one from a secondary district and one from a postsecondary institution, each from different counties
- o Representatives of local business and industry in each of the two counties

The current task force will solicit appropriate volunteers to act as these representatives. The role of the tech-prep executive committee will be to establish policy and procedures for implementing the plan and to

oversee the activities involved in implementing the plan. Once established, and assuming the availability of state or federal funding, the executive committee will hire a full-time tech-prep coordinator to manage day-to-day operations and coordinate activities prescribed in the plan. Likewise, the executive committee will solicit a volunteer from each participating institution to act as institutional coordinator and oversee the tech-prep activities carried within the institution. Finally, the executive committee will establish a tentative overall schedule for implementing the tech-prep plan, in conjunction with the tech-prep coordinator and the institutional coordinators. Figure 1 depicts the structure of the overall tech-prep effort, including the curriculum, information, and evaluation committees to be established.

Select program areas. A list of program areas considered by the current task force to be candidates for 2+2 tech-prep curricula is presented in table 5. This list of possible program areas was developed in the course of numerous and lengthy discussions within the task force about which institutions desired partnerships in which areas; the list reflects a mix of members' wishes and their best judgment and wisdom as to which programs appeared suitable. At the end of these discussions, task force members concluded that a rigorous and structured process of program selection should be carried out by the expanded executive committee as part of the formal plan. Labor market information, which has been provided to the task force, will be used to validate the selection of programs.

It should be noted that the intent of the current task force is to develop a single, integrated 2+2 tech-prep curriculum for a given *program area*. For example, the business and office program area presented in table 5 includes individual programs in accounting, data processing, executive secretary, office administration technology, and word processing. An integrated 2+2 tech-prep curriculum for the business and office area would comprise individual curricula for each of those individual programs organized to reflect a feasible, coherent career progression in the business and office program area. This integration would aid in broadening students' career options by creating a feasible, well-defined career path covering the entire business and office area.

The executive committee will first finalize the list of candidate program areas, adding new candidates or eliminating present candidates as appropriate. Then the committee will choose individual program areas for which a regional 2+2 tech-prep curriculum will be developed using these criteria:

- Overall, each participating secondary district and postsecondary institution will be involved in the development of at least one tech-prep curriculum.
- Program areas will be selected from participating institutions that offer the program and agree to cooperate in the development and implementation of a 2+2 tech-prep curriculum.
- Insofar as possible, program selection will attempt to capitalize on existing relationships between the secondary and postsecondary levels.
- Institutional factors such as staff experience or lab/shop facilities may affect the selection of a program.

TABLE 4

WORK BREAKDOWN

Provide overall leadership

1. Establish tech-prep leadership
   a. Reconstitute the current task force as the tech-prep executive committee, with expanded membership
   b. Select a tech-prep coordinator to oversee the implementation of the tech-prep plan
   c. Select institutional coordinators to oversee tech-prep efforts in each participating institution
   d. Establish tentative overall schedule
2. Select program areas for which tech-prep curricula will be developed
   a. Finalize list of candidate program areas
   b. Apply selection criteria to final list of candidate program areas
   c. Obtain agreement to program selection by all eligible participating institutions
   d. Obtain formal commitment to developing selected tech-prep program curricula from all eligible participating institutions
3. Hold two-day kick-off workshop for all tech-prep personnel
   a. Select date and location
   b. Determine workshop agenda
   c. Identify appropriate presenters
   b. Arrange for appropriate facilities and equipment
   e. Develop necessary workshop materials
   f. Conduct workshop sessions as per agenda
   g. Evaluate achievement of workshop goals
4. Oversee tech-prep activities
   a. Finalize overall schedule
   b. Arrange for release time or other compensation for participating institutional personnel
   c. Establish a mechanism for disbursing tech-prep grant funds
   d. Establish policy and make decisions as appropriate
   e. Provide guidance and assistance as needed to individual committees
   f. Obtain periodic progress reports from curriculum, information, and evaluation committees
5. Establish administrative arrangements for implementing tech-prep curricula
   a. Obtain formal agreement of all participating institutions to implement regional tech-prep curricula developed
   b. Establish timelines for appropriate revision of original curricula and curricular materials of all participating institutions

Develop tech-prep curricula

1. Set up a curriculum committee for each tech-prep program area selected
   a. Solicit program faculty volunteers from each eligible participating institution
   b. Solicit appropriate business and industry volunteer representatives
   c. Hold curriculum committee organizational meetings
   d. Select curriculum committee chairs
   e. Establish curriculum committee work schedules
   f. Determine responsibilities of individual committee members
2. Design a tech-prep curriculum for each tech-prep program area selected
   a. Determine specific job descriptions to which each program area applies
   b. Identify competencies required by workers in job descriptions
   c. Identify applicable courses offered by each participating institution
   d. Identify competencies covered by applicable courses
   e. Determine core of applied academic and technological competencies to be covered in secondary programs
   f. Determine occupational competencies to be covered in secondary programs

TABLE 4--Continued

g. Determine occupational competencies to be covered in postsecondary programs

Conduct an information campaign

1. Set up an information committee for the overall tech-prep effort
   a. Solicit faculty and counselor volunteers from each participating institution
   b. Solicit appropriate business and industry volunteer representatives
   c. Hold information committee organizational meeting
   d. Select information committee chair
   e. Establish information committee work schedule
   f. Determine responsibilities of individual committee members
2. Publish a quarterly tech-prep newsletter
   a. Gather information on progress on overall effort and individual program areas
   b. Develop and produce quarterly issues
   c. Distribute to all appropriate staff at participating institutions
3. Develop a student and parent handbook
   a. Identify specific benefits to students of the tech-prep concept and the individual tech-prep curricula
   b. Develop individual tech-prep curriculum program descriptions
   c. Identify relevant administrative procedures, guidelines, and standards
   d. Develop and produce handbook
   e. Distribute handbook as appropriate
4. Develop a counselor handbook
   a. Identify the counselor's role in tech-prep
   b. Identify specific benefits to students of tech-prep and the individual tech-prep curricula
   c. Revise individual tech-prep curriculum program descriptions as appropriate
   d. Identify relevant administrative procedures, guidelines, and standards
   e. Develop and produce handbook
   f. Distribute to counselors region-wide
5. Conduct other information activities
   a. Make presentations at appropriate meetings of student, parent, professional, and civic organizations
   b. Issue news releases announcing milestones achieved
   c. Prepare public service announcements for radio and television
   d. Obtain interviews with regional and local newspapers

Develop a student evaluation plan

1. Set up an evaluation committee for the overall tech-prep effort
   a. Solicit faculty and administrator volunteers from each participating institution
   b. Solicit appropriate business and industry volunteer representatives
   c. Hold evaluation committee organizational meeting
   d. Select evaluation committee chair
   e. Establish evaluation committee work schedule
   f. Determine responsibilities of individual committee members
2. Develop student evaluation procedures
   a. Establish guidelines for verifying that secondary students possess required occupational, applied academic, and technological competencies
   b. Establish guidelines for verifying that entering postsecondary students possess required occupational, applied academic, and technological competencies
   c. Establish time frame during which student evaluation is to occur
   d. Develop a student competency achievement document

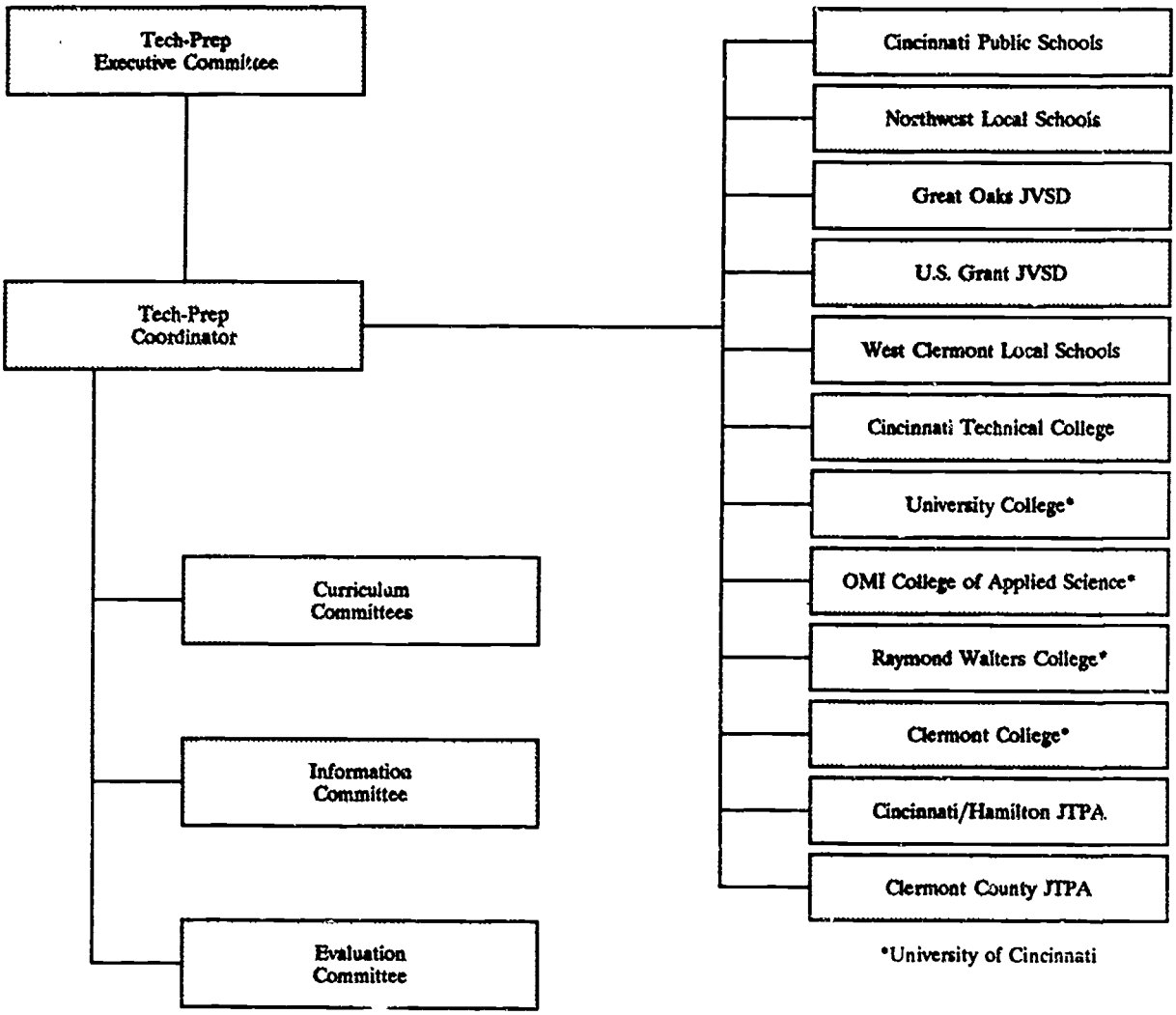

Figure 1. Organizational structure of tech-prep

TABLE 5

CANDIDATE PROGRAM AREAS

Business & Office	Accounting Data Processing Executive Secretary Office Administration Technology Word Processing
Health Occupations	Dental Assisting Dental Hygiene Diversified Health Occupations Health Technologies Medical Assisting Nursing
Human Ecology	Child Care
Service Industries	Food Service Hospitality/Hotel Management Restaurant Management
Automotive Technology	Auto Mechanics Automotive Service Management Diesel Mechanics
Construction Technology	Construction--Electrical
Engineering Technology	Computer Programming Computer Repair/Technology Drafting/Computer-Aided Drafting Electrical/Electronics Graphic/Commercial Art Graphic Communications Technology Industrial Lab Technology Manufacturing Engineering Technology Pre-engineering Scientific Lab Technology
Other	Law Enforcement

- o Widespread use of competency-based curricula will favor the selection of a program area.

- o Anticipated demand for workers in an occupation will be an important consideration in program selection. However, formal labor market projections from such sources as the Ohio Bureau of Employment Services will not constitute the *sole* criterion of demand. Committee members' personal knowledge and experience of local conditions will also be taken into account.

Once the executive committee has finalized program selection, the tech-prep coordinator will obtain the agreement of each participating secondary district and postsecondary institution to the programs selected and a formal commitment from each participating institution to cooperate in the development of 2+2 tech-prep curricula for the selected programs. In addition, the tech-prep coordinator will act under the guidance of the executive committee to staff curriculum, information, and evaluation committees (see below).

Hold two-day kick-off workshop. After the membership of the curriculum, information, and evaluation committees is established, a two-day workshop will be held to inaugurate the overall effort. The tech-prep coordinator will consult with institutional coordinators to choose a date and location compatible with the schedules of the participating institutions. He or she will make logistical and program arrangements to accomplish these workshop objectives:

- o Provide an overview of the concept of 2+2 tech-prep programs, including the nature and benefits of such programs

- o Provide an overview of each secondary district and postsecondary institution participating in the overall effort

- o Provide an overview of the entire range of activities included in the plan and a schedule for the performance of those activities

- o Provide the opportunity for those participating in the tech-prep effort to meet and get acquainted

- o Answer questions and address concerns raised by participants

- o Hold an initial organizational meeting of the individual curriculum, information, and evaluation committees

At the close of the workshop, participants will be asked to complete evaluation forms to determine whether the workshop objectives were met.

Oversee tech-prep activities. Throughout the duration of planned activities, the tech-prep executive committee will meet monthly to monitor progress. The committee will set policy and procedures for conducting

planned activities, act as arbiter in case of difference of opinion, and provide guidance and assistance as needed by individual committees.

When tentative individual committee work schedules are completed, the tech-prep coordinator will consult with the individual committee chairs to finalize the overall schedule of tech-prep activities. He or she will act with the individual institutional coordinators to arrange release time or other compensation for participating institutional personnel. The tech-prep coordinator will also establish a mechanism for disbursing tech-prep grant funds and will obtain periodic reports of progress from the chairs of the individual curriculum, information, and evaluation committees to be forwarded to the tech-prep executive committee.

Establish administrative arrangements for implementing tech-prep curricula. When development of the various 2+2 tech-prep curricula is completed, the tech-prep coordinator will act under the guidance of the executive committee to obtain the formal, written agreement of all participating institutions to implement the regional tech-prep curricula developed. The coordinator will consult with the institutional coordinators to establish timelines for each participating institution to carry out needed revisions to its original curricula and curricular materials. Finally, the coordinator will continue to oversee and monitor the progress of such revision until all revision is accomplished and the new regional curricula is in place and implemented.

Develop Tech-Prep Curricula

A regional 2+2 tech-prep curriculum will be developed for each of the program areas selected. Development will be based on input from program faculty from each of the participating institutions and from appropriate JTPA personnel and local employers from both counties. It is anticipated that such a wide base of input will help to ensure that the curricula developed are appropriate--that secondary program graduates are prepared to enter either the world of work at the level of beginning technician or further technical training at the postsecondary level and that postsecondary program graduates are prepared to enter the world of work at the level of advanced technician. Furthermore, students at both levels will enjoy the benefit of a solid foundation for lifelong careers: the core of applied academic and technological competencies needed to keep abreast of the changing workplace.

Set up curriculum committees. Prior to the regional two-day kick-off workshop, the tech-prep coordinator will work with the institutional coordinators to recruit volunteers for each curriculum committee. At least one program faculty member will be recruited from each participating institution. Furthermore, a guidance representative from both the secondary and postsecondary level will be included on each committee, as well a representative of local business and industry from each county.

It is expected that such intensive involvement of program faculty from all participating institutions will help to give individual committee members a sense of ownership and a stake in the new tech-prep curricula.

It is to be hoped that this sense of ownership and stake in the new curriculum will help compensate for the stake that faculty members naturally feel in their existing programs. Likewise, participating in the development of the new curricula will help avoid the feeling that it is being imposed by others--outsiders who do not know and may not care about the specific circumstances of individual institutions, programs, and staff. Similarly, participating in committee work other faculty from other institutions should help develop appropriate relationships among this cadre of professionals who will eventually implement the new curriculum.

Equally, the involvement of representatives from guidance and business and industry will help to ensure a strong regional commitment to the new tech-prep curricula. Guidance personnel will have a chance to see the careful, rigorous work involved in developing the curricula; they will be better able to appreciate its logic and benefits and more likely to recommend enrollment to students. Business and industry representatives can witness the commitment that educators have to providing trained, skilled workers--and the hard work that goes into doing so.

Each curriculum committee will hold an initial organizing meeting as part of the regional two-day kick-off workshop. This initial meeting will allow committee members to make one another's acquaintance, receive an overview of the relevant program offerings at each institution and of the activities assigned to the committee, and begin discussions of their responsibilities. Each committee will select a chair, determine the responsibilities of individual committee members, and establish a tentative schedule for further meetings and other committee activities.

Design tech-prep curricula. The first task of the committees in designing their curricula will be to define the specific occupations and job descriptions to which each program area applies. Once the job descriptions for a given program are identified, the committees will move on to the core of the curriculum design process: the identification of the specific student learning outcomes required for each occupational curriculum. Given the nature of the 2+2 tech-prep curriculum concept, each curriculum should include three separate sets of student learning outcomes: occupational competencies required for entry into the occupational at a beginning level, occupational competencies required for entry into the occupational at an advanced level, and the applied academic competencies in math, science, communication, and technology required for a lifelong career in the technological workplace.

It is not anticipated that work in competency identification will need to start from scratch. Although relatively few vocational-technical programs, secondary or postsecondary, are thoroughly competency-based, most programs do include the most important component: occupational competencies. All the participating institutions rely on input for their individual advisory committees in designing existing programs. It is expected, therefore, that each participating institution will contribute its own list of relevant occupational competencies, whether identified formally or informally.

These individual lists can be analyzed to identify common and similar competencies to be synthesized into a new list of tech-prep occupational competencies. Additional competencies can be added, if necessary, at

the suggestion of the business and industry representatives. In some cases, the new tech-prep occupational competencies may not require further verification. If the individual lists from participating institutions were recently developed and verified through a survey of local employers, for example, additional verification would be superfluous. If, on the other hand, original competencies lists are older or considered less reliable, the committee will verify its new tech-prep occupational competencies. Local employers can be surveyed by mail and asked to rate the importance of each of the identified competencies to the job descriptions cited. Individual ratings can then be aggregated and analyzed to determine whether or not competencies should be included in the planned tech-prep curriculum.

Once the tech-prep curriculum competency list has been compiled, representatives of the educational institutions can begin identifying applicable program courses offered by their institutions and the competencies covered by those courses. These equivalencies will be useful later, as each participating institution installs the new tech-prep curriculum and obtains appropriate instructional materials.

Finally, the curriculum committees will divide the overall list of tech-prep curriculum competencies into three specific sublists:

- o ***Beginning occupational competencies*** to be covered in secondary programs to prepare students to enter the world of work as beginning technicians
- o ***Applied academic competencies*** in the areas of math, communication, science, and technology to prepare students for lifelong learning and careers in technological occupations
- o ***Advanced occupational competencies*** to be covered in postsecondary programs to prepare students to enter the world of work as advanced technicians

The final 2+2 tech-prep curricula will be presented to the tech-prep executive committee for review and approval.

Conduct an Information Campaign

An information campaign is considered one of the keys to successful implementation of the 2+2 tech-prep curricula. Professional staff of all the participating institutions need to be kept informed of the goals, plans, and progress of the tech-prep effort. Counselors must be specifically targeted, given the critical role they play in assisting students' choices of training and careers. Counselors need to know that tech-prep curricula represent a positive step, a step that leads to both good careers and further education.

Equally, students and parents need to be targeted as the eventual consumers of the new 2+2 tech-prep curricula. Students and parents must first of all be informed that the new curricula exist. Second, students and

parents are not educational specialists; the benefits of the new curricula may easily escape them. However, they can certainly appreciate those benefits when those are made known.

Set up an information committee. Prior to the regional two-day kick-off workshop, the tech-prep coordinator will work with the institutional coordinators to recruit volunteers for an information committee. At least one faculty member, administrator, or guidance counselor will be recruited from each participating institution. Representatives of local business and industry from each county will be included as well.

Like the curriculum committees, the information committee will hold an initial organizing meeting as part of the regional two-day kick-off workshop. This initial meeting will allow committee members to make one another's acquaintance, receive an overview of the activities assigned to the committee, and begin discussions. The committee will select a chair, determine the responsibilities of individual committee members, and establish a tentative schedule for further meetings and other committee activities.

Publish a quarterly tech-prep newsletter. A short (e.g., four- to eight-page) quarterly newsletter will be published to keep faculty, administrators, and guidance personnel at participating institutions, JTPA personnel, and interested local employers informed of the progress and activities of the tech-prep effort. Information committee members will gather progress reports on the overall effort and individual program areas and develop brief, informative articles. These will be assembled in a simple, easy-to-read format. Copies of each quarterly issue will be printed and distributed as appropriate.

Develop a student and parent handbook. A student and parent handbook on the regional 2+2 tech-prep curricula will be developed. The primary focus of this handbook will be students' lifelong need to cope both with the technology of the workplace and the continual change of that technology and the foundation that tech-prep's core of applied academic and technology competencies provides for that purpose. The handbook will present vocational-technical education and the tech-prep curricula in a positive light, highlighting the dual benefits of broadened career paths and preparation for further education.

This handbook will provide a basic but thorough explanation of the concept of tech-prep and the advantages of both tech-prep and the individual tech-prep curricula. Information on curriculum content at both the secondary and postsecondary levels and occupations for which the tech-prep curricula are appropriate will also be provided. Last, administrative procedures, guidelines, and standards will be covered. The handbook will be designed in an attractive, easy-to-read format, and materials will be written at a ninth-grade reading level. The handbook will be printed and distributed to students upon request or at the suggestion of guidance counselors or teachers.

Develop a counselor handbook. A handbook for counselors on the regional 2+2 tech-prep curricula will also be developed. Like the student and parent handbook, the counselor handbook will focus on the foundation that tech-prep provides to students for dealing with technological change their lives and careers. Likewise, it will present vocational-technical education and the various tech-prep curricula in a positive light, as leading to an

attractive range of possibilities both in work and in education--not a dead-end, no-exit dumping ground for less capable students. In the counselor handbook will be described the role of counselors in promoting appropriate student enrollment and the benefits to students of both the tech-prep concept and the individual tech-prep curricula. Detailed information on curriculum content at both the secondary and postsecondary levels and occupations for which the tech-prep curricula are appropriate will also be included, along with relevant administrative procedures, guidelines, and standards. The handbook will be designed in an attractive, easy-to-use format and will be printed and distributed to all guidance counselors in participating secondary districts and postsecondary institutions.

Conduct other information activities. As opportunities arise, other information activities will be carried out as appropriate to disseminate information as widely as possible to educators, employers, and the general public. Information committee members will seek to make presentations on the tech-prep concept and curricula at meetings of student, parent, professional, and civic organizations. News releases will be issued at appropriate milestones in the overall plan of activities (e.g., the initiation of the overall effort, the selection of tech-prep curricula to be developed, or the implementation of the first and last curricula). Public service announcements will be prepared for radio and television, and committee members will seek to have them aired. Finally, committee members will request interviews with regional and local newspapers.

Develop a Student Evaluation Plan

Finally, a plan will be developed for evaluating student competency during or at the end of the secondary program or, if necessary, at the beginning of a postsecondary program. Secondary districts need a means of determining whether or not students have attained the competencies covered in instruction. Postsecondary institutions must have a means of determining whether or not incoming students possess the competencies prerequisite for further instruction. Recent high school graduates or adults seeking retraining may or may not have gone through the secondary component of the tech-prep curriculum. Furthermore, the concept of 2+2 tech-prep is particularly well suited to students who "stop out" of school in order to begin a career; it specifically provides the kind of career options that allow students to work for a while and then go back for advanced training for a while. In all these cases, skill levels must be determined upon entry.

Set up an evaluation committee. Prior to the regional two-day kick-off workshop, the tech-prep coordinator will work with the institutional coordinators to recruit volunteers for an evaluation committee. One faculty member, administrator, or one guidance counselor will be recruited from each participating institution.

Like the other committees, the evaluation committee will hold an initial organizing meeting as part of the regional two-day kick-off workshop. This initial meeting will allow committee members to make one another's acquaintance, receive an overview of the activities assigned to the committee, and begin discussions.

The committee will select a chair, determine the responsibilities of individual committee members, and establish a tentative schedule for further meetings and other committee activities.

Develop student evaluation procedures. Guidelines will be developed for verifying that secondary students possess both the occupational and applied academic and technological competencies covered in the secondary curriculum. This evaluation will ensure that students are prepared for entry into either the world of work or a postsecondary institution. Likewise, similar guidelines will be prepared for use by postsecondary institutions when the competency of entering students must be verified. Finally, appropriate time frames for evaluation will be established.

It is anticipated that appropriate documentation from secondary programs and districts can be used to satisfy the needs of postsecondary institutions when students progress directly from secondary to postsecondary training. Likewise, such documentation may be sufficient after a relatively short lapse of time (e.g., up to one year). In either case, the nature of appropriate documentation will be established (e.g., student competency profiles or course transcripts), along with acceptable times of evaluation (e.g., end of course or end of program).

Evaluation procedures will also be developed for students who apply for entry into the postsecondary component of a tech-prep curriculum but did not complete the secondary component of the curriculum. These can be used for students who completed a general or academic program in high school, students who possess a General Equivalency Diploma (GED), or adults in retraining. Guidelines will also address an acceptable time frame for administering such evaluation.

Finally, the evaluation committee will develop the format for a student competency profile that can be used throughout the entire 2+2 tech-prep curriculum. Such a document would capitalize on the lifelong nature of the preparation provided by the tech-prep curriculum. Competency achievement can be indicated as students complete individual courses and programs; competencies achieved in subsequent training can be added as appropriate. The entire list of curriculum competencies might be contained, for example, in a single document appropriately subdivided into beginning occupational competencies, advanced occupational competencies, and applied academic and technological competencies. Once the individual curriculum committees have completed the identification of competencies, a student competency profile can be developed for each of the 2+2 tech-prep curricula to be implemented. These profiles can serve as transportable documentation of the skills that each student has attained when he or she applies for employment or further education.

Chapter 3

Evaluating the Success of Tech-Prep

The nature of the tech-prep effort planned naturally suggests an evaluation of two related but different aspects of the work to be conducted. Most important, the effectiveness of the individual 2+2 tech-prep program area curricula developed must be assessed. Does a given program area curriculum genuinely include the occupational competencies required of a beginning worker in the occupation? the occupational competencies required of an advanced worker in the area? the applied academic competencies required to accommodate change in the technology of the workplace? Does an overall curriculum reflect a realistic career path for workers in the area? Does the gradation of competencies within an overall curriculum lead to meaningful employment in an area related to training? to further training in the area? to progression along the career path indicated by the curriculum? In other words, are the theoretical advantages and benefits of the 2+2 tech-prep concept being realized in practice?

In addition, the effectiveness of the process used to develop the 2+2 tech-prep program area curricula must be assessed. Is the sequence of tasks and activities designed to accomplish the objective of curriculum development adequate, or have key tasks and activities been omitted? Is the division of responsibility among the tech-prep executive committee, tech-prep coordinator, and individual working committees (i.e., curriculum, information, and evaluation committees) appropriate--does it actually work to assign tasks and activities as planned? Do the working committees function effectively and efficiently? Does representation of all participating agencies and actors on all working committees produce the desired results of involvement and ownership, or are committees too large to accomplish their work efficiently?

Answers to such questions concerning both process and product are of more than academic interest. The 2+2 tech-prep program area curricula developed under the scope of the current plan are only the beginning of a longer process of developing similar regional curricula for *all* appropriate program areas in Hamilton and Clermont counties. Consequently, both the process and the product embodied in the current plan will serve as

models for further work; precise, reliable information on the effectiveness of the original processes and products can be used to enhance the effectiveness of future processes and products.

Toward this end, an overall process and product evaluation system will be designed and implemented. To assist in this effort, the Center on Education and Training for Employment will be contracted to provide process and product evaluation consultation. The Center's work with other partnerships, as well as with the current task force, will provide technically sound and objective assistance in critical evaluation activities.

The *product* component of the evaluation plan will involve the development and implementation of a computerized data profile system to track participating students' educational and career development. Such a system will allow for monitoring educational and career progress and related data at all times for all students entering and matriculating through a tech-prep program.

Indeed, the task force wishes to stress the importance it places on such longitudinal evaluation and student follow-up, from first entry into the program through career progress in the labor market. Therefore, the computerized data profile system will provide for both short-term evaluative data as well as longer-term, outcomes-based information--with the emphasis placed on a student-based longitudinal evaluation process. The system will also account for those students who "stop out" and then return, as well as those who enter the military or college for related training.

During the first two years of the 2+2 regional tech-prep program, a great deal of *process* evaluation will also occur. Attention will be given to the efficiency and effectiveness of curriculum development and coordination; the depth and nature of the partnerships developed among secondary, postsecondary, and JTPA agencies; the marketing plan; the enhancement of guidance and counseling elements; the involvement of the private sector; the degree to which curricular diversity enables flexibility (e.g., applied academics, co-op, and vocational and technical education); and the effectiveness of the regional committee structure.

The ultimate test of the tech-prep plan's effectiveness will be the quality of the beginning and master technicians it produces, as well as that of the applied academic and technological foundation students receive for lifelong careers. It is anticipated that data on such quality should be available with some degree of reliability at approximately the sixth year from the start of planned activities. By that time, the basic structure should be well in place, with corrective refinements well under way and students exiting programs and moving into employment.

Chapter Four

Timelines and Estimated Budget

The task force anticipates that in total, two full years will be required to develop and implement the 2+2 regional tech-prep curricula selected. The two-year period includes time for all tasks and activities designed to achieve the objectives of the plan as described in chapter 2. The timelines in figures 2-5 on the following pages present a chronology for those planned tasks and activities. (It should be noted that the timeline for any given activity represents simply the period of time during which the activity will occur but does *not* indicate relative level of staffing; in addition, the tasks and activities listed in the figures are abbreviated versions of those listed in table 4.)

In addition, the planned two-year period includes a period of seven months (at the end of Year 2) in which the individual secondary districts and postsecondary institutions can make the specific curricular adjustments necessary to their actual vocational and technical programs. Each institution will need to review the course of study for each relevant program offering to ensure that learning objectives and activities provide the information, practice, and evaluation needed to ensure that students can achieve the new tech-prep curriculum competencies. It is anticipated that in some cases, new learning objectives and activities will need to be developed for tech-prep competencies, either occupational or applied academic. In such cases, new instructional and evaluation materials will need to be developed as well.

Carrying out these curricular adjustments is not reflected in the following timelines, as that task is not part of the planned work per se. However, monitoring, guidance, and oversight by the tech-prep coordinator and the tech-prep executive committee does continue during the seven-month period of curricular adjustment. This will allow the executive committee to assist participating institutions as necessary during the course of curricular adjustment.

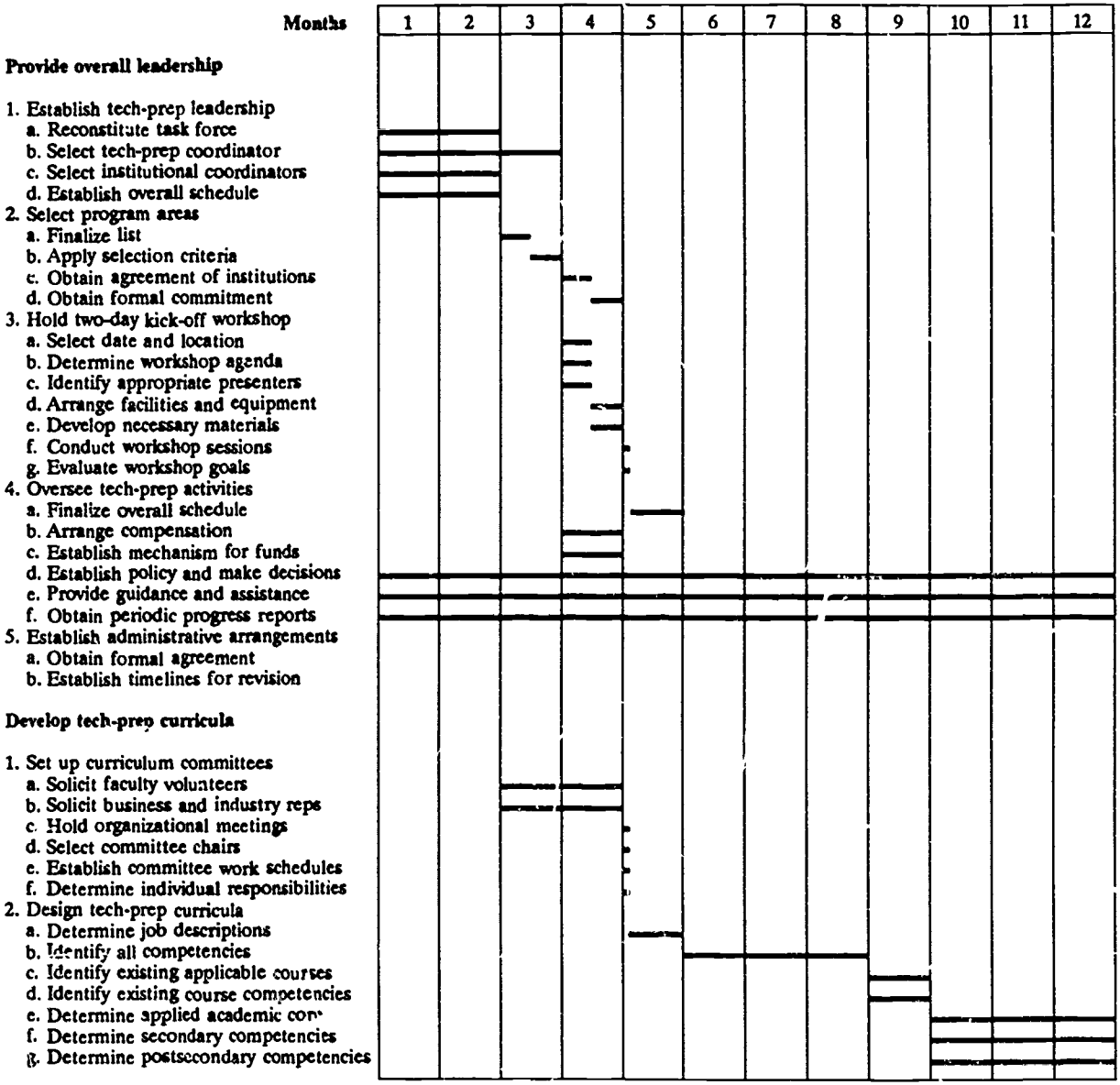

Figure 2. Year 1: Leadership and curriculum development

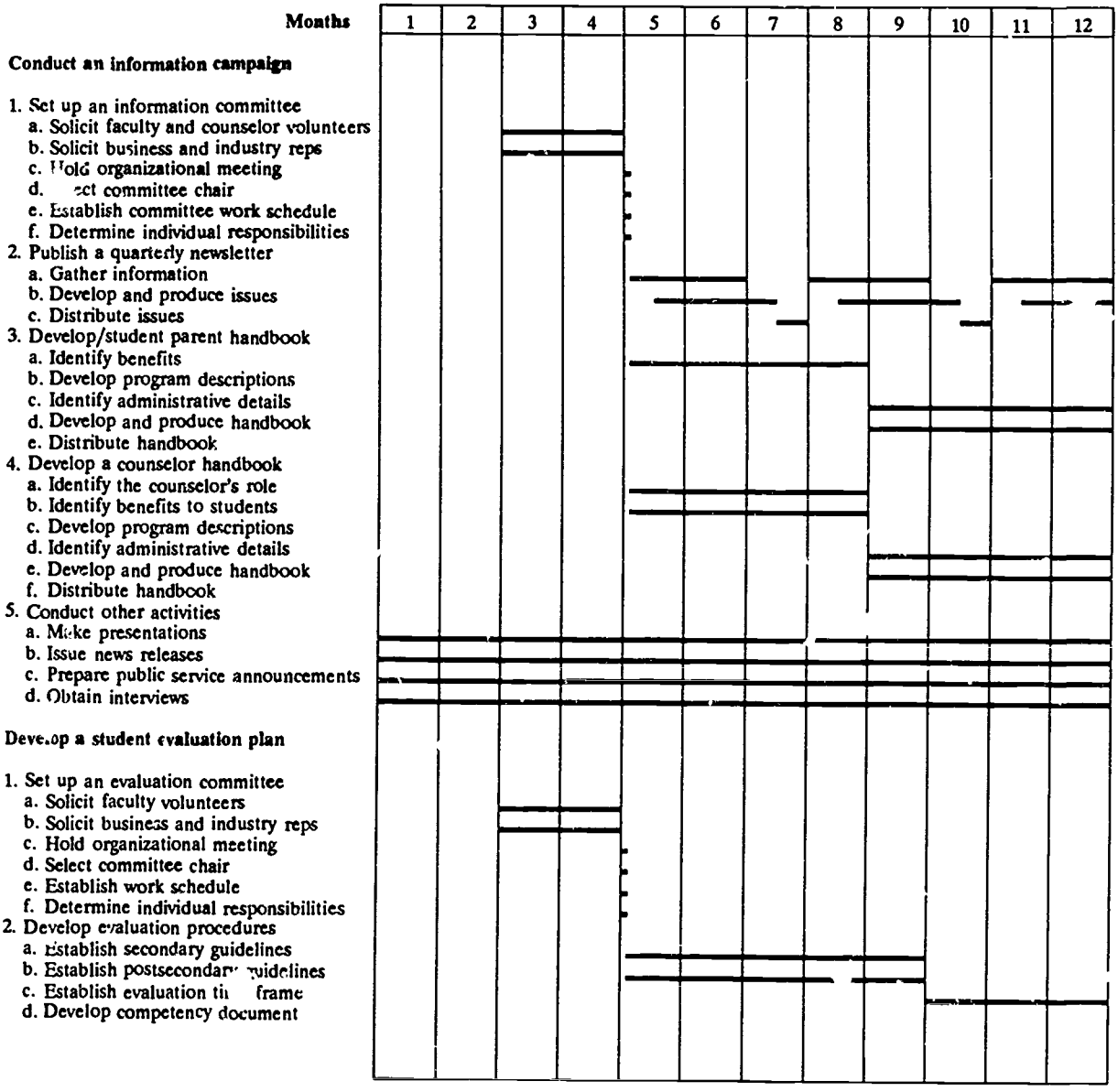

Figure 3. Year 1: Information campaign and student evaluation plan

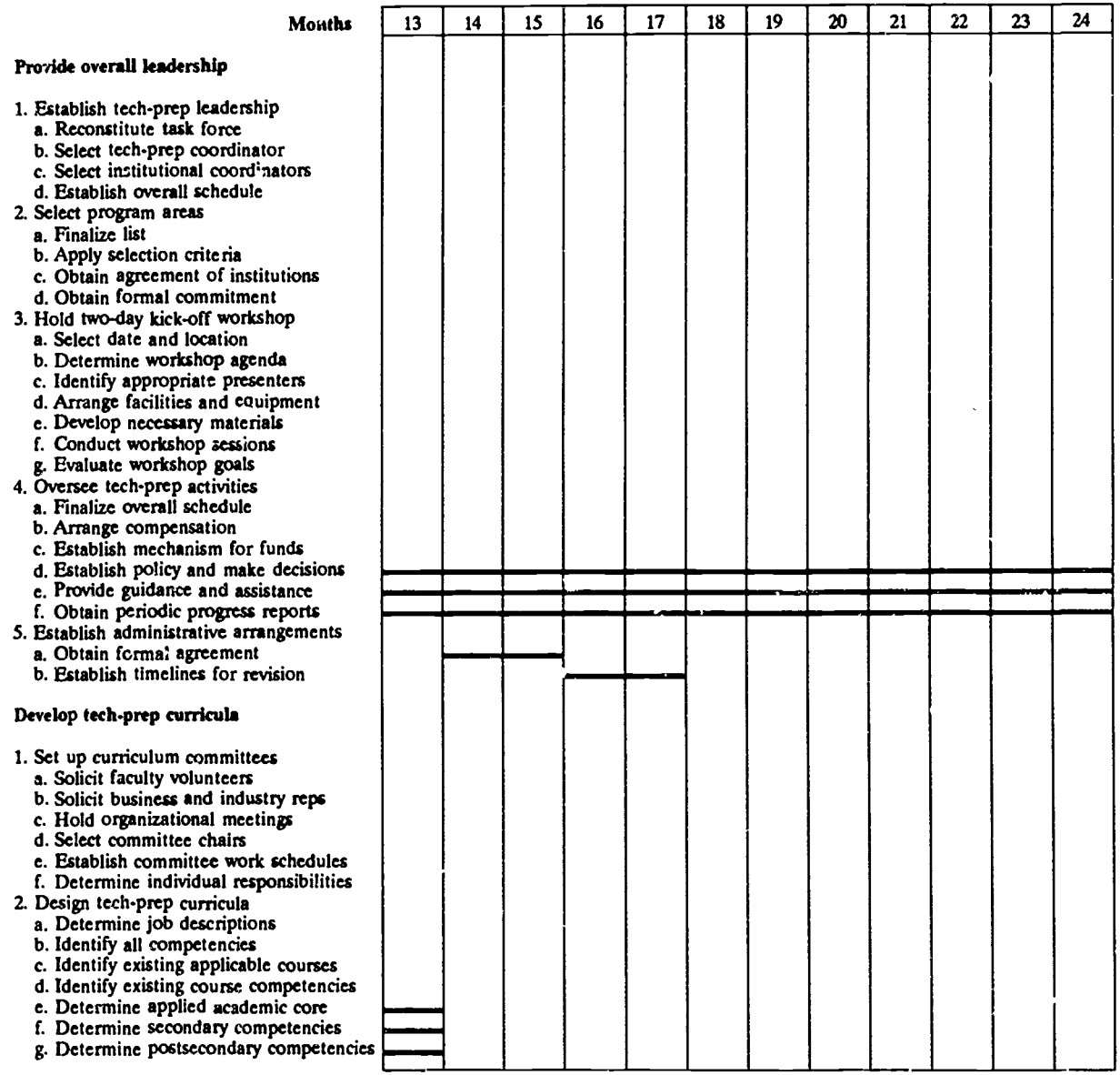

Figure 4. Year 2: Leadership and curriculum development

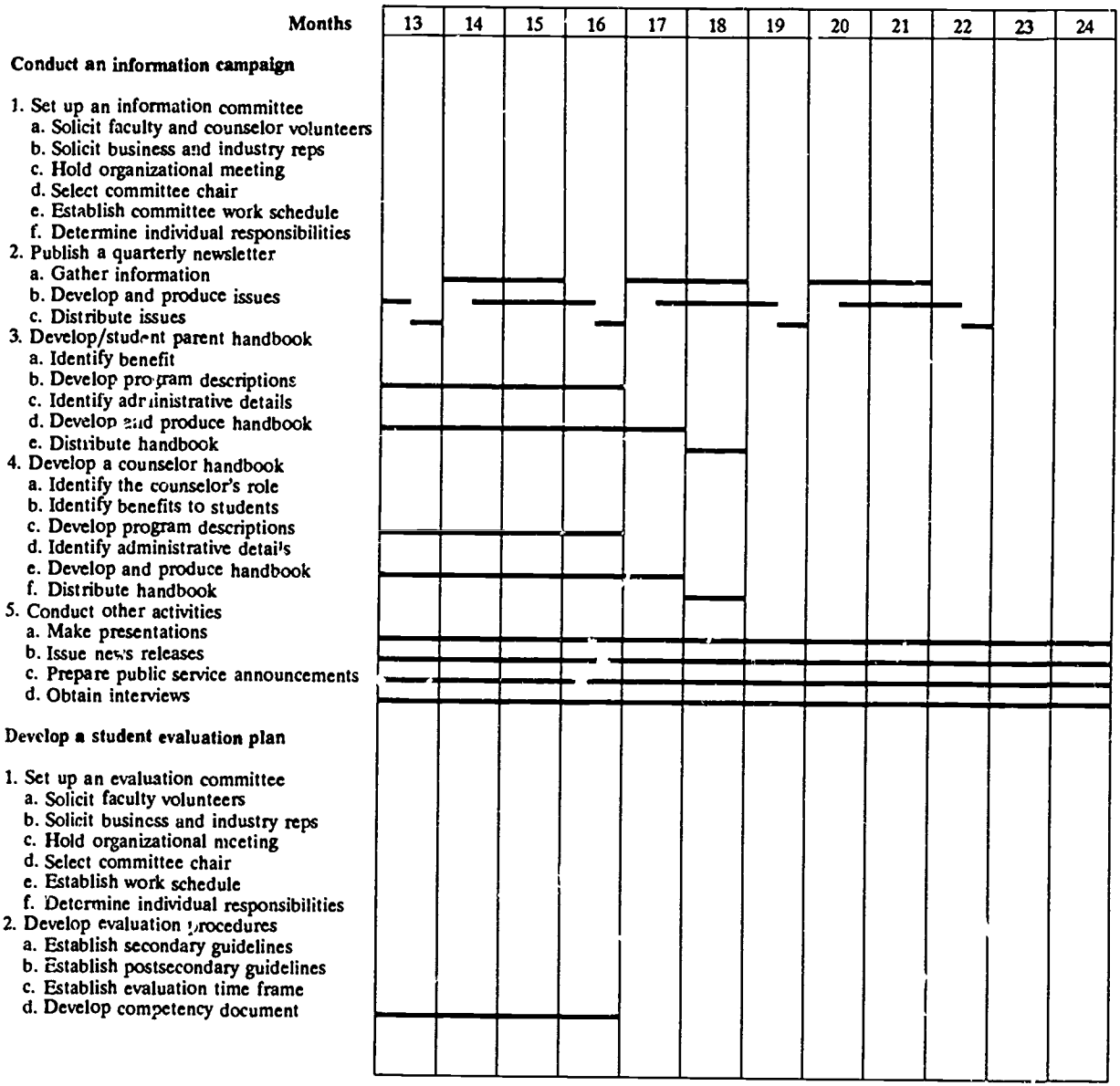

Figure 5. Year 2: Information campaign and student evaluation plan

The budget estimate for the two-year implementation phase of the regional tech-prep program is $1,312,352. This figure includes all costs associated with implementing the plan, as follows:

- Personnel
  - --Tech-prep coordinator
  - --Institutional coordinators
  - --Institutional faculty and staff acting as committee members
  - --Clerical support
- Regional inservice training, including release time for participating faculty and staff
- Travel
- Printing and distribution of handbooks
- Office supplies, copying, and telephones
- Process and summative evaluation

These costs are best estimates provided by the participating agencies.

Chapter Five

The Impact of Tech-Prep

The task force is confident that the development and implementation of the planned 2+2 regional tech-prep curricula will have considerable positive impact on both the process and products of vocational and technical education. Anticipated benefits include an enhanced teaching-learning process; strengthened relationships among secondary districts, postsecondary institutions, JTPA agencies, and the community of local employers; and increased rates of student retention and student entry into work, college, or the military.

The Teaching-Learning Process

Enhancements in the teaching-learning process are expected to occur as a result of the superior quality of the 2+2 regional tech-prep curricula. Careful attention and planning will be given to the identification of both occupational and applied academic competencies and to the distribution of these competencies across appropriate educational levels. Consequently, the curriculum as a whole and its individual components will be more solid and more firmly grounded in the reality of the world of work. The addition of the tech-prep core of applied academic and technology competencies and the distribution of occupational competencies into beginning and advanced components will help to ensure that students are prepared not just for immediate entry into the world of work but for a lifetime of employment.

There will also be greater continuity both within and across individual curriculum components; such continuity will lead to a stronger, clearer, and more natural progression not only in career paths in the world of work but also in the classroom, shop, and laboratory. In simple terms, the relationship of one area of instructional content to other areas of instructional content and, eventually, to the world of work will be stronger and at the same time more visible. Such a stronger relationship makes learning easier for students and teaching easier for instructors: the clearer the connection to two different pieces of content, the easier it is to understand

and appreciate the importance of each. In addition, the greater visibility of such stronger, clearer relationships helps to make more apparent what previously was less so: the more visible the connection, the more likely students are to see and appreciate it.

Furthermore, the nature of student entry, participation, and continuation in a tech-prep program increases contact with counselors and faculty. Students will receive more individualized attention both in career planning and in specific career preparation. Such increased contact and individualized attention can only benefit students, leading to more appropriate career and educational choices and more fruitful learning experiences.

Equally, the visible quality of the tech-prep curricula can contribute to an improvement in the image of vocational and technical education in the eyes of students, parents, and the community at large. Through an appropriate information campaign, the general perception of vocational and technical education can be changed from that of a dead-end dumping ground for less capable students into that of a promising, open-ended pathway to greater possibilities. The visible advantages of the tech-prep concept can help the general public appreciate what is already true to a great extent--that vocational and technical education can be an appropriate choice for even the most gifted student, that it increases future career and educational options, that it can provide any student the flexibility and the foundation needed for a lifelong career in the technological workplace.

Finally, the development of tech-prep curricula represents a more fundamental solution to the problem of modernizing vocational and technical education. Not just a band-aid, the tech-prep concept goes to the heart of the problem of preparing students for the workplace of tomorrow, a workplace expected to be continually changing as the technology it uses evolves. Furthermore, the stringent standards for curriculum content implicit in the tech-prep concept and the notion of regional curricula set forth in this plan can assist greatly in establishing a more uniform standard of quality for vocational and technical training, no matter the educational level or the nature of the student served.

Relationships among Partners

It also seems reasonable to assume that the process of developing and implementing tech-prep curricula will lead to strengthened relationships and partnerships among the agents involved. This has already begun to occur. The planning process undertaken this year has created a level of understanding and a working relationship far superior to past relationships between and among the agencies involved. As faculty and other staff from educational institutions have the opportunity to work with one another, they will also have the opportunity to get to know one another; they can understand one another's perspectives, unique situations, strengths and weaknesses, constraints and advantages. A traditional lack of understanding of institutions and missions can be remedied for the better.

This mutual involvement in developing tech-prep curriculum regional implementation will, in effect, create a single continuum of program faculty across the secondary and postsecondary levels. Ideally, faculty will come to look at their portion of a tech-prep curriculum not as course content that belongs to them but as their share of a curriculum that belongs to the community as a whole. Indeed, as previous attitudes of competition and territoriality, of threat and adversary are replaced by increased knowledge and understanding, there is the possibility that conventional boundaries between educational levels and districts will begin to break down; perhaps in their place will arise a renewed awareness of the proper focus of all education: the student and the student's needs.

Likewise, the relationships between education and other sectors of the community can become closer through the tech-prep process. Close ties with the local employment community are traditional in vocational and technical education; similar ties have been forges with JTPA agencies and their predecessors Once again, joint involvement in tech-prep activities will offer the opportunity to strengthen existing ties and discover new ones.

Students

It is perhaps on students that the tech-prep curriculum concept can have its greatest impact--and rightly so. After all, students' needs for effective preparation for a lifetime in the world of work drive the entire concept and its realization in the planned effort. And it is the visible effectiveness of the preparation provided by tech-prep curricula that is expected to have the greatest effect on students.

Many of the improvements to the teaching-learning process noted previously will have a double benefit for students. Of course, students receive the direct benefits of a more solid curriculum with increased continuity and a clearer progression within and between training and work. Students who complete the curriculum will have received the occupational competencies needed to enter the world of work and the applied academic and technology competencies needed to stay in the world of work in the long run. Closer contact with faculty and counseling staff will improve the appropriateness of students career and educational choices as well, leading to happier, more productive lives.

In addition, however, this increased awareness of the workplace and relevance of training content to students' future lives can lead potentially to great indirect benefits for students as well. As students progress through a tech-prep curriculum, they will be more likely to *see* the connection between training and work or between current training and further training. Students will be more likely to see and appreciate the relevance of school to themselves and to their own lives. And the more students see this relevance and feel their own need for training, the more likely they will be to stay in school.

Furthermore, the regional nature of the tech-prep curricula to be developed should enhance the ability of secondary and postsecondary agencies to serve the needs of *all* students. Economically disadvantaged students or JTPA clients will be less limited in their choice of training programs: with the regional curricula, a college on the bus line is more likely to offer the program such students want. Likewise, adult women in retraining will be more likely to find their programs of choice in a postsecondary institution that provides child care facilities.

A Direction for the Future

In short, the concept of regional 2+2 tech-prep curricula appears to be a promising answer to a number of the imperatives facing vocational and technical education in the 1990s. It provides a viable means of modernizing both the specific curricula offered and the fundamental approach taken to preparing students for lifelong careers. It promises to enhance the entire teaching-learning process by providing solid curricula, thoroughly grounded in a realistic appreciation of the nature of the workplace, both today and tomorrow. It opens the possibility of renewing the perception of parents and students of the intrinsic quality of vocational and technical education and firmly implanting the notion of doors opening rather than closing. It can reasonably be expected to make even more effective the close links already in existence among education, the private sector, and the public sector. Finally, it offers one feasible and fruitful means to keep students in school, by establishing relevant and visible connections between what goes on now in school and what will go on later at work and in life. The imperatives are pressing; the solution offers hope; the path is clear.

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This document was prepared and
produced with the assistance of the
Center on Education and Training for Employment,
The Ohio State University.

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