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ABSTRACT

The status and potential of links between apprenticeship and cooperative education were studied to determine whether and how resources should be expended to increase and strengthen those linkages. Data were collected through a literature review; from the U.S. Bureau of Apprenticeship and Training (BAT); and from the departments of education and cooperative education coordinators in 41 states and 9 large cities. The following are among the findings and recommendations: (1) strengthened linkages would help the BAT achieve its objectives of playing a more effective role in preparing youth for employment, developing a more flexible labor pool, expanding into new occupations, and involving more women, disadvantaged, and handicapped students; (2) the few effective programs linking secondary cooperative education and apprenticeship should be presented as models; (3) educational and apprenticeship professionals are interested in establishing and strengthening linkage programs but are hampered by barriers such as lack of experience and knowledge, few resources, and lack of administrative support; (4) once a viable program is underway, state and local educational agencies and BAT should be able to maintain effective local and state programs; and (5) occupations and states with effective cooperative education provide opportunities to expand and increase apprenticeships. (Appendices--the bulk of the document--provide details on the study methodology and results, definitions and descriptions of apprenticeship and cooperative education, a 19-item bibliography, an annotated list of National Child Labor Committee publications, and a copy of their pamphlet, "Everybody Benefits from Cooperative Education.") (CML)

REPORT ON STUDY OF EXISTING AND POTENTIAL LINKAGES BETWEEN APPRENTICESHIP AND COOPERATIVE EDUCATION

PROJECT 99-8-2412-75-012-04

SUBMITTED TO THE BUREAU OF APPRENTICESHIP AND TRAINING

U.S. DEPARTMENT OF LABOR

NATIONAL CHILD LABOR COMMITTEE

Solomon Hoberman, Project Director

September 30, 1988.

CONTENTS

EXECUTIVE SUMMARY

I.

This is a report of a study of the status and potential of links between apprenticeship and cooperative education to determine the desirability of expending resources to increase and strengthen linkages and, if desirable, how to accomplish these objectives.

Our findings and recommendations are:

A. Increased and strengthened linkages would help the Bureau of Apprenticeship and Training (BAT) achieve its objectives of playing greater, more effective roles in preparing youth for employment, developing a richer, more flexible labor pool, expanding into new, important occupations (including health, computer related and child care fields) and involving more women, disadvantaged, and handicapped students in apprenticeships.

B. The occupations in health, child care, computer and other office machine operation and service, and marketing and distribution are only a few examples of new areas that could be tapped.

C. There are effective programs linking secondary cooperative education and apprenticeship. These are few in number, limited to a few states. They should be, but have not been presented as models for replication.

D. Educational and apprenticeship professionals are interested in establishing and strengthening linkage programs. But, there are significant barriers to translating "interest" into action and success. Among the barriers are a lack of experience and knowledge of how to develop an effective linkage, as well as a dearth of resources and administrative and political support.

E. A sustained, national effort is necessary to overcome initial barriers. This should include workshops on linkage, national publicity on developing a skilled labor force, and involvement of the private sector.

F. Once a viable program is underway, state and local educational agencies and BAT offices should be able to maintain effective local and state programs.

G. The educational system must be motivated to accept operational responsibility.

H. BAT should provide technical assistance such as publicity, training trainers for workshops, recruiting employers, advising on curriculum, and providing occupational information.

I. A far higher percentage of cooperative education students than apprentices are women, disadvantaged and handicapped. Linkage programs, bringing coop-ed occupations into apprenticeship and apprenticeship into coop-ed, will provide opportunities to increase the participation of these populations in apprenticeship.

J. Occupations and states with effective cooperative education provide opportunites to expand and increase apprenticeships.

K. Relationships with BAT will motivate educators to be more responsive to needs of employers and the labor market.

L. Linkage will give BAT opportunities to become a partner with vocational education for employment and transition to work.

II. PROJECT 99-8-2412-75-012-04 RESEARCH REPORT

A. This is a report of a study directed toward answering the questions:

- What are the status and potential of programs linking apprenticeship and secondary cooperative education?
- Could improved linkage increase the number of apprentices and introduce new apprenticeable occupations?
- Would increased and stronger A/CE* linkages give BAT a more important role in preparing young people to make the transition from school to work?
- What information and activities are needed to establish and maintain increased and stronger A/CE linkages?
- Could A/CE linkages lead to increased participation in apprenticeships by women and disadvantaged and handicapped young people?

B. INTRODUCTION

Similarity of the learning approaches in apprenticeship and cooperative education (Appendix F 7.1) makes linking these programs a feasible educational, social and economic objective. "The United States and Canada are the only countries in the world in which apprenticeship is not training for teenage youth." (Glover, 1986). Not only would linking A/CE open apprenticeships to younger people, it would add to the apprenticeable occupations, ease entry for women and disadvantaged and handicapped young people, and increase the number of well trained workers.

The school workplace relationship of A/CE could have numerous other benefits. Among these are:

- It is cost efficient; the same educational funds would educate and prepare students for employment and reduce the cost of training new workers for business and industry;
- It motivates students to stay in school and learn and earn, reduces the dropout rate and increases employability;
- It permits early remediation; as supervisors identify students' deficiencies, the school can provide help and the student is motivated to learn as the practical need for the learning is obvious;
- A cooperative education "run-in" (preapprentice) gives employers experience with employing women in non-traditional jobs, and disadvantaged and handicapped youth without making a permanent commitment and leads to greater employment opportunities for these populations.

Granted these benefits, what is the experience with this type of linkage? What are the barriers and the opportunities for extending and strengthening linkage programs? How can barriers be overcome and opportunities exploited? Who should be involved? This report tries to answer these questions.

* "A/CE" stands for "apprenticeship and cooperative education"

The literature and earlier findings have been reviewed and current information obtained from the city and state departments of education and from several BAT field offices. (Appendix F.1 is a more detailed description of the study methodology. Appendix F.2 is a summary of the findings of the literature search.)

C. CURRENT STATUS OF LINKAGES BETWEEN APPRENTICESHIP AND COOPERATIVE EDUCATION

1. Forty-one states responded. 34% (14/41) claim to have some level of linkage between apprenticeship and cooperative education or vocational education. In some states this is single school district. However, A/CE linkage is not or revolutionary concept.

2. There is great interest at the state level, in increasing and strengthening A/CE linkages. 89% (32/36) of state cooperative education coordinators reporting are interested in learning more about linking apprenticeship and cooperative education and receiving some help in developing and maintaining an effective program. 93% (25/27) of those without programs and 78% (7/9) of those with programs.

3. Every state with an outstanding cooperative education program* without A/CE linkage is interested in learning and establishing linked programs. These are the states which are best able to establish and service a program.

4. Having an outstanding cooperative education program and a high level of apprenticeships (defined as the number of apprentices per 1000 inhabitants) are indications of concern with preparing students for em loyment. The question arises, "Is there a relationship between these?" But, the data do not indicate any relationship between the level of apprenticeships and the quality of cooperative education.

5. States with the least participation in apprenticeship are most interested in learning more about A/CE linkage. (14/14) Efforts to increase A/CE linkage might focus on any of these states.

* A state is identified as having an outstanding program when: a) it has a state coordinator actively engaged with local educational agencies; b) the local agencies succeed in increasing the number of programs, participating students and employers and c) the programs include most if not all of the high quality elements described in appendix F 7.3.

6. Education in the US is a state responsibility. A/CE linkage cannot be forced from the federal level. However, it is not enough that there be interest in establishing linkage programs at the state level. The teacher coordinators (street level workers) must be motivated. We met with one group of thirty teacher coordinators in Arkansas. This is a state with a low level of participation in apprenticeship. (See appendix F.4) I described and discussed with them the nature of apprenticeship and linkages programs. Only one was familiar, to any significant degree, with apprenticeship.

Every coordinator wanted to learn more about the nature of apprenticeship: how a linkage program would work; how curriculum, educational standards, and workplace supervision would be affected; the advantages to the student, the employer, and the coordinator, etc. Virtually everyone was willing to attempt to develop a linkage program if their principals agreed and if assistance was provided to overcome some of the barriers that they anticipated.

Anticipated barriers, in addition to those reported in the survey (see appendix F.3.1e) were:

A) No information about A/CE linkage
B) No labor market information
C) Lack of counselors' motivation
D) No information for parents, students, and employers
E) Inability to obtain commitment for more than one year from employers and students
F) Excessive paper work
G) Fear of losing worksites
H) More difficult worksite development
I) Age requirements; indifference of school administration.

7. Telephone interviews with state and local educators and BAT representatives in states which there are or were linked programs were revealing. They indicated that some see there are insurmountable barriers to developing and maintaining worthwhile programs in non-traditional occupations. They felt that apprentices in these areas are often one-time only and that therefore resources could be better used in other ways.

8. Suggestions made by local and state educators in interviews and responses to questionnaires include:

a) initiate national and state publicity for A/CE linkage
b) start skill development in secondary school using the cooperative education model
c) improve information about apprenticeship and A/CE linkage for educators, students, counselors, employers et al.
d) hold an annual A/CE conference at state and national levels;
e) provide funds for publicity, curriculum development, work site development, teacher/coordinator training, etc
f) establish closer BAT-education relationships.

9. No state coordinator, reporting A/CE linkage, had easily retrievable information relating to the occupations involved. Those willing to estimate reported occupations such as machinist and auto mechanic and not "service" or other "new"

occupations. (Appendix F3.1 item "d".)

10. Data, for the last year with reasonably accurate national occupational data for cooperative education, indicated significant differences in occupational concentration from apprenticeship. This suggests that increased A/CE linkage could open up new occupations for both programs.

COOP-ED ENROLLMENT BY OCCUPATIONAL AREA 1979-1980

OCCUPATIONAL AREA	PERCENTAGE OF TOTAL
Agriculture	4.1
Marketing & Distributive	34.4
Health	2.7
Occupational Home Economics	6.9
Business Education	20.2
Technical	.4
Trade & Industry	25.7
Others (Diversified)	5.7
Total	100.1

There were virtually no construction occupations in the Apprentice-School Linkage Project (Appendix F 6.2). More than 60% of the placements were in "machine trades". This distribution differed significantly from both other apprenticeships and cooperative education. There were important leads with respect to occupational oportunities which seem never to have been followed up. These include occupations such as dental assistant, floral designer, secretary and child care attendant.

There were a number of apparent barriers for developing new occupational areas, such as lack of funding, union support or lack thereof, and increased workload for staff. However, further discussion developed a consensus that a strong national effort could overcome or reduce the inhibiting effects of these barriers. Activities suggested include: publicity, labor market analysis, joint efforts to develop curricula, and the linking of secondary and post-secondary education through apprenticeship.

11. Although the Perkins Act might provide some funding, there was only one report of a local program (Des Moines) using Perkins Act funds for disadvantaged students.

12. The CSR Incorporated report of the Apprenticeship-School Linkage Project was reviewed, (Appendix F 9) The eight sponsors (New Jersey; Rhode Island; Des Moines, Iowa; Cleveland, Ohio; Rockport, Illinois; New Orleans, Louisiana; Nashville, Tennessee; Houston, Texas) were contacted by both questionnaire and telephone. In general the findings of the study were confirmed. There is agreement with the finding of satisfactory outcomes for students and employers. Five reported that they no longer had programs. Two, New Jersey and Des Moines, reported thriving programs. Nashville reported elements of a program.

Major differences between the pilots which matured into regular programs and those that did not seem to be:

. Immediate incorporation into the regular vocational and cooperative education bureaucracy and budget;

. In one case (New Jersey), no subsidy for employers and less emphasis in a second (Des Moines) than in the other pilots;

. An ability to avoid or reduce competition with other educators over students, resources, work-sites, etc.

. Less dependence on Federal funding from the start;

. Good cooperation between education and BAT which has continued (BAT does a good deal of the promotion);

. Students selected carefully and a trial period to insure completion and employer satisfaction (preapprenticeship).

Some perceived reasons why the other five did not mature into regular programs include:

. When the money disappeared the employers most of which were small businesses were no longer interested.

. There was and is no interest in the program at the top and intermediate levels of the educational system.

. Vocational and cooperative education teachers saw this as a program competing for students, funding, job placements, etc.

. Nobody (including BAT staff in one account) seemed to be interested in keeping the program going.

. There was insufficient training of the people who were expected to keep the program going.

. There was little interest among apprenticeship people in the occupations in which we could have obtained job slots.

. The job slots disappeared (local depression).

. There was no money in the educational budget for staff.

. Difficulty in recruiting small, independent employers (the back bone of cooperative education)

However, none of these problems seem to be unsolvable. Most are covered in the previously identified "barriers' and suggestions for overcoming these. (#8 above and appendix F.3).

13. Information was obtained from fourteen cities. (Appendix F.3.2) Half reported some degree of linkage. Ten want to expand their programs and ask for information, training, manuals, workshops, etc. Two did not respond to this question.

14. Only New Jersey reported use of a preapprenticeship approach There is interest in other jurisdictions in learning more about this approach. The approach has the advantage of giving the student real occupational experience. Moreover, it provides, the employer with experience of working with the student and the school before being locked into an apprenticeship agreement.

D. POTENTIAL FOR ESTABLISHING AND STRENGTHENING A/CE LINKAGES

1. There is great potential for increasing and strengthening the relationships between apprenticeship and cooperative education as indicated by the interest among cooperative education educators and officials of the Association of Cooperative Work Experience Educators.

As a result of efforts of the Consortium for Experiential Cooperative Education (CECE is a NCLC department), one state, Nebraska, has instituted an activity to encourage and assist local educational agencies to develop and maintain linked programs. One school district has responded and the state will sponsor a workshop this Fall for all school districts. This seems to be a good indication of the responses that can be anticipated in the states with good cooperative education programs.

2. A/CE linkages provide apprenticeship with opportunities to respond to changing economic opportunities and economic and social needs after coop-ed programs demonstrate possibilities for school-work linkage.

3. Participation by young women, disadvantaged and handicapped students in cooperative education is greater than in apprenticeship. A/CE linkage, by bringing occupations into the apprenticeship orbit, will increase the participation of these populations in apprenticeship. In order to pinpoint opportunities for apprenticeship, a study is needed to identify the occupations in which students have participated successfully in cooperative education.

4. A/CE linkage will expand apprenticeship into new areas such as health, computer technology and child care. This will strengthen the approach, demonstrate its importance for new fields, introduce new employer populations to apprenticeship, and enrich the labor force with competent workers.

5. Worker mobility is an important variable that affects structural unemployment and labor shortages. Broader and increased use of apprenticeship credentials may help solve these problems. NCLC has been spearheading a credentialing approach for cooperative education. It has been urging educators to provide "documented employability" (a joint statement by the employer and the school attesting to a student's experience, competence, and dependability) for students who have completed cooperative education. Apprenticeship will provide this, possibly with nationally recognized standards.

6. National programs which have the potential for improving A/CE linkage include:
a) developing and conducting publicity and information programs;
b) developing curriculums;
c) establishing standards;
d) training trainers for joint teacher and apprenticeship professionals workshops, and to overcome the other barriers the other barriers identified.

7. A/CE linkages provide BAT with an opportunity to increase and improve the quality of the national labor pool and to improve the transition from school to work for many young people.

8. Establishing viable A/CE linkage would provide leads for answers to several of the issues and questions raised in the Apprenticeship 2000. E.g.: What barriers prevent expansion into non-traditional areas and how can more women become apprentices?

9. Linkages between secondary and post-secondary vocational education have the potential to provide the continuity of educational support for A/CE linkage.

10. The New Jersey pre-apprenticeship approach should be examined closely as a means for increasing employer participation.

11. Greater use of the Perkins Act incentives should be encouraged to bring new supporters for apprenticeship.

E. RECOMMENDATIONS TO INCREASE THE NUMBER AND EFFECTIVENESS OF A/CE LINKAGES AT STATE AND LOCAL LEVELS

1. STRUCTURE

a) BAT should try to reactivate the program with the Department of Education for A/CE linkage but be prepared to carry the major role initially. This should include all of the activities spelled out in the Labor-Education agreement.

b) BAT and SAC representatives in all regions should be encouraged to become as proactive as those in the regions in which there are successful programs to provide assistance to teacher/coordinators, counselors and other educators involved in locating work-sites, develop curricula, finding resources, etc.

c) Planned, periodic regional conferences between state BAT and SAC leaders and state cooperative education coordinators could lead to a number of cooperative and coordinated activities. Some of these, in addition to increased A/CE linkage, include cooperation between state and local advisory committees for apprenticeship and cooperative education, joint involvement with state economic development programs, resolution of problems relating to providing educational support after secondary school, and publicity and public information programs.

d) The potential resources of apprenticeship and cooperative education staffs at national, state and local levels should be assessed to insure maximizing the use of existing resources.

e) Large city departments of education should be involved in the regional conferences. These jurisdictions usually have significant problems relating to school dropout rates, the failure to prepare students for employment, and impoverishment of the local labor pool. To the extent that A/CE linkage can be shown to provide even partial solutions to some of these, the education departments can be motivated to assign one or more full-time people to oversee, coordinate, assist and develop A/CE linkages.

2. ACTIVITIES TO SUPPORT AND ENCOURAGE LINKAGE PROGRAMS

a) The information, competencies and other resources needed to develop and maintain an A/CE linkage program should be identified.

These should include:

- Continuing communications and cooperation between BAT (or SAC) and state and local educational agencies' cooperative education coordinators;
- Detailed information on model programs, key elements of A/CE programs, how apprenticeship and cooperative-education overlap, etc.;
- Training programs and materials to develop and maintain the skills and competencies needed;
- Detailed information relating to labor market projections, including job openings, nature and levels of competencies required, and employers' expectations;
- A plan for the educational component after graduation from high school;
- A full time teacher/coordinator for every 35/50 A/CE students;
- Public relations, curriculum and similar general support from national and state organizations.

Materials should be prepared by either BAT or DOE or jointly, and distributed for use by states. (NCLC has prepared material for use by cooperative education coordinators. Appendix F 11)

b) Regional workshops should be conducted for state and large city cooperative education coordinators to prepare them to instruct, assist, and encourage administrators and teacher-coordinators in local educational agencies and high schools.

c) While the Departments of Labor at the national and state levels can provide some labor market information, they do not have the resources to provide all the local information that will be needed. Local educators will have to be prepared to obtain local informaton to modify, extrapolate, and improve the usefulness of national and state information for local educational use. Assistance and instruction should be provided in local labor market analysis for teacher/co-ordinators and counselors to help them identify occupational opportunities and counsel students.

Special attention should be given to helping them obtain information which will simplify and encourage extending A/CE linkages to new areas.

d. As indicated in the findings there are problems relating to education and linkage between work experience and education after graduation from high school. These hinder the creation of A/CE programs with all-important small employers. Consequently, for apprenticeships that will require an educational component after high school these problems must be solved.

One possible solution is to give educational credit for education prior to formal entry into apprenticeship. Another may be to develop independent study materials. A third is to utilize, as is done in some jurisdictions, night school courses. A most profitable approach may be to identify and encourage existing and potential links between educational levels. In fact, there has been some discussion among educators about linking cooperative education programs in the secondary schools with those in post-secondary schools. Including A/CE linked programs should be an added incentive.

e) The important "gate keeping" role played by counselors must be addressed. There should be planned activities to influence and prepare them to counsel students with respect to apprenticeships.

f) A program should be developed to interest and to involve economic development and small business organizations in developing a richer, more effective work force using A/CE.

g) Unions play no role in cooperative education. They are crucial in apprenticeships. Efforts should be made to involve them in support activities for A/CE linkage programs. This may be a "public interest" activity. Occupations need not be in areas of their primary interest but in new unorganized occupations.

h) Analysis of states' activities (Appendix F 5) indicates that initial efforts for A/CE should be in Virginia, Illinois, Ohio, Oregon, Nebraska, Utah, Pennsylvania, New Mexico, and Florida.

i) Programs should be conducted at vocational educator conferences to publicize the A/CE linkage approach and to provide training for interested educators.

j) An "exhange bulletin" to provide leads, etc. should be published by BAT to maintain practitioners' interest and disseminate new findings, etc.

3. NEEDED STUDIES AND RESEARCH

We have determined, for example, that few states have A/CE linkage programs and that none has an extensive program anywhere near the potential for this approach. Where there are programs they are considered important. All states and in particular those with good cooperative education and those with the least apprenticeship are most anxious to embark on A/CE linkages. A/CE linkage can increase the percentages of women and disadvantaged young people in apprenticeship. We have also identified some significant barriers to further development. Most of these relate to information, assistance in motivating employees and union participation and training teacher/coordinators. Recommendations from the field for overcoming these are noted as well. However, this study and

report do not attempt to answer all the questions or provide all the information needed for a continuous national effort. Suggestions for possible further studies and rationale for these are described below.

a) Virtually every respondent asked for information about successful and model programs. Information about these is also useful for analysis of key elements of effective programs. A number of states responding to the CECE questionnaire claimed that there are model programs in their states. These leads should be followed up, programs studied, key elements analyzed, and reported.

b) This study identified (Appendix F 3) a large number of barriers. However, just knowing, for example, that "employers want adults" doesn't provide enough information to overcome the barrier. A recommendation for "publicity to interest employers" to encourage greater support and participation does not help any local agency to interest employers. Modifications of the CECE manual "Presenting Cooperative Education" and the Workship entitled "Marketing Cooperative Education" may be adequate for a beginning but more is needed. A study is needed to spell out the barriers in sufficient detail to permit developing and testing alternative strategies for overcoming them. The same thing is true for opportunites.

c) We indicated earlier that apprentice requirements and school curricula should be compared. A related problem is the relationship between these and the needs and requirements of the labor market. Both students and employers have questions about the nature of the requirements. Studies should be made to rationalize the education, experience, competence and time needed to move to the journeyman level.

d) Studies are needed to identify and learn how to overcome barriers to extending A/CE linkage beyond the traditional apprenticeships. Some which were identified are licenses, labor contracts, child labor laws, insurance, staffing requirements, lack of past experience etc. Many of these are not major and can be overcome.

e) Neither state nor local educators are equipped to identify and evaluate new occupations for A/CE linkage potential. There should be a continuing study by the Bureau of Labor Statistics and BAT to provide the information and to guide local activities.

f) The New Jersey pre-apprenticeship approach should be assessed, clarified and defined and the information disseminated, so that educational jurisdictions which are willing can use and test the approach.

g. The occupations in which there are many cooperative education students but no apprenticeships should be studied for the potential for apprenticeship.

h. There should be analysis of cooperative education occupations in which large numbers of women, disadvantaged, and special needs students are employed to evaluate apprenticeability.

APPENDICES

STUDY METHODOLOGY

NCLC had planned a simple questionnaire survey of A/CE before the BAT RFP for this study was issued. It had already received comments from the members of The Interstate Research Combine (TIRC) on a draft questionnaire, and was in the process of revising the questionnaire, before sending it to the state departments of education and to the state cooperative education coordinators. Consequently, considerable time was saved in getting this project under way. With some telephone follow-up, appropriate information was received from forty-one of the fifty states.(The NCLC questionnaire is included in this appendix.)

The questionnaire was revised for this study and sent to nine representative large cities. Data from four other cities were available from other studies and contacts.

Thirteen states were identified as having outstanding cooperative education programs based on our experiences gained over a seven year period working with state and local departments and discussions with knowledgeable people in the Department of Education and officials of the Cooperative Work Experience Educators Association. A special analysis was made of the status and interest in these states. (Information was received from 12.)

Data were obtained from BAT on apprenticed occupations nationally and the number of apprentices in each state. These data were compared with similar data (in the NCLC files) for cooperative education for the last year for which national data are available (1979-80).

Characteristics of apprenticeship and cooperative education, in the literature and "marketing" materials, were compared to identify commonalities and differences. (Appendix B)

A conference was held (at the Arkansas state conference for vocational educators) with thirty school and district cooperative education coordinators and supervisors, to determine teacher/coordinators' knowledge and experience with apprenticeship and their interest in linking apprenticeship and cooperative education.

Educators and BAT representatives in the eight jurisdictions that participated in the 1979-81 BAT pilot project, were interviewed.

Data were analyzed to identify retlationships among a number of variables. These included: rates of participation in apprenticeship and in cooperative education by states; quality of cooperative education, A/CE linkage activity ; and interest in instituting and strengthening A/CE linkages.

Data were gathered to provide leads to identify barriers and opportunies to extend and strengthen A/CE linkages, outstanding linkage programs, types of assistance states and local education departments need, and assistance provided by state departments of education to local educational agencies.

LITERATURE SEARCH

The review of the literature produced little hard findings relating apprenticeship and vocational education in general and cooperative education in particular.

The several reports of CSR, Incorporated dealing with the Apprenticeship-School Linkage Project (Appendix 5.9) were studied. These indicate that under certain circumstances a continuing, profitable A/CE linkage can be established and maintained. As previously noted, our study tended to confirm these conclusions.

The ERIC search (Appendix 5.10) for items relating to A/CE relationships,(the relevant items are listed in the Bibliography, Appendix 5.8)) produced little except the feeling that establishing a closer A/CE linkage would be beneficial both for education and the national economy .

The several articles by Glover were strongly advocated stronger A/CE linkages and more aggressive joint programs. Glover's "Apprenticeship Lessons from Abroad" (1986) provides some evidence, based on the experiences in other countries, that expansion and greater use of apprenticeship may require opening and encouraging entrance to a much younger population than is the case in the United States at present. This is supported by our own findings with respect to cooperative education. In earlier studies, we recommended that there be greater exposure to real vocational alternatives in the middle school and actual work exposure and experience in the eleventh year. We felt that these are necessary to motivate students to learn and become proficient in the "basics", acquire good work habits, help give employers confidence in employing high school graduates, etc.

Two other reports strongly recommend cooperative education as a necessary element in preparing high school students for employment. These are the Committee for Economic Development's "Investing in Our Children: Business and the Public Schools(1985) and The Unfinished Agenda (1986), the report of The National Commission on Secondary Vocational Education. While neither of these considered A/CE linkage, it is clear from the text that both would support this approach.

The "Interagency Agreement Action Plan" (1986) of the Department of Labor and the Department of Education demonstrates the felt need, by professionals in these departments, "to improve coordination and cooperation between apprenticeship and vocational education at the Federal, State and local levels."

BAT publicity materials relating to apprenticeship were reviewed and compared with those for cooperative education. The arguments for participation are similar.

TABULATION OF RESPONSES* TO CECE - TIRC STATE QUESTIONNAIRE

	Y	N	X	?
1.Is there any linkage in your state between apprenticeship and				
secondary vocational education**	14	21	1	5
secondary cooperative education	13	24	1	3
post-secondary education	10	18	4	9
2.a.Was there a linkage in the past?	1	21	16	3
b.If "yes" why was it discontinued? Employers refuse to participate unless we can pay most of students' wages.				
c.Are you interested in learning more about linkage and being helped to establish linkage	27	4	10	0
3.a.Is there a policy or program to link apprenticeship and				
secondary vocational education	11	15	6	8
secondary cooperative education	12	17	6	6
post-secondary education	13	16	8	4
b.Is there a person or committee responsible for strenthening these linkages?	23	9	5	4
c.Is any technical assistance provided to help LEAs develop and maintain linkages	22	8	6	5

If "yes" please describe the nature:
Technical assistance upon request (14), state specialist helps planning, curriculum development, linking with BAT and SAC and serves as consultant (6), funds provided for program development, help develop an advisory committee, has a field based regional specialist.

d.List the occupations in which there is linkage with the approximate number of students in each.
Only nine of the states that said there are linked programs in the state had any information about the occupations. Only three of these were able to provide any information about the number of students. It is not clear whether the occupations noted were all linked with cooperative education or were regular apprenticeships,i.e. not with in-school youth but with adult high school graduates.
Electrical, plumbing, and other licensed trades (14), auto mechanic (7), machinist (6), heating, air conditioning, and refrigeration (3), small engines (3), building trades (8), food services (2), printing, fisheries, carpet layers, loggers, floriculture, finance clerk, clerk typist, emergency medical technician, licensed practical nurse, hotel management, computer services, building maintenance, cabinet making, travel agent, fire fighting,--------.

"X" no response;"?" not clear or conflicting responses.

* Responses were received or information obtained by telephone from 41 states. For some there were two or more responses, sometimes conflicting, resulting in a "?".

** Does not include cooperative education.

e.Barriers to establishing linked programs:
20 listed one or more barriers, including: poor knowledge or understanding by school people, employers, students (15); turf conflicts (6); companies not willing to commit for a full apprenticeship (5); the economy (5); related education after high school (5); poor A/CE relationships (3); employers want adults; union opposition (6); paperwork (2); added costs;insurance; no demand; and apprentice salaries.

f.How did you or how are you trying to overcome these?
There were 19 responses. These included: developed an advisory committee including labor and business representatives, obtained and provided information to teacher/coordinators, counselors, students, employers, et al, developed a public relations program, conduct an annual intergroup conference to improve relationships, solve problems, and provide information, attempt to get positive response from insurance companies, use cap stone approach for apprenticeship (apprenticeship placement and commitment made in the last year or six months of school after a successful coop experience), use apprentices to recruit students, get BAT staff to reduce and handle paperwork and to participate in publicity and other activities, work at improving coop-ed BAT communicati s, cooperation, etc., get community and education department support, and publicize success stories.

g.What assistance would be useful to help develop and improve linkage between apprenticeship and cooperative education?
There were 23 reponses. Included were: training for teacher/coordinators (6), information about successful and model programs (7), several variations on closer education and BAT relationships (7), funds for pilot programs, study and information of apprenticeable cooperative education occupations and of industries with opportunities (4), more information, publicity, and assistance for LEAs (3), better and more useful local labor market information (4), model apprenticeship agreements (2), counselor motivation and training, recruit union members to serve on the advisory committee, hold regional workshops to publicize, provide information, develop networks, and motivate for linkage programs (3), national and regional public relations (several variations), clearer BAT guidelines (eg transferability), and information about elements and procedures for establishing a viable program.

h. Are there outstanding linking programs in your jurisdiction? Who could provide information about these?
14 responded positively. 12 identified the LEA. These were: Alabama, Alaska, Florida, Iowa, Kentucky, Michigan, Nebraska, New Jersey, Ohio, Oklahoma, Pennsylvania, and Virginia.

i. Advice for establishing or improving linkages:
Train and motivate coordinators and administrators, develop support among state-wide organizations, use the processes of cooperative education, solve the insurance roblem, use cap-stone, work with BAT for a state joint council and joint planning and assessment, and involve organizations such as VICA.

TABULATION OF RESPONSES TO CITY QUESTIONNAIRES AND TO TELEPHONE INTERVIEWS

Information was obtained from fourteen cities. The interest of the cities is indicated by the 100% response. Five of these were cities involved in the 1979-81 pilot project. These were interviewed by telephone. Questionnaires were sent to nine other cities. In several cases these had to be followed up with telephone interviews. In a few cases information was obtained by telephone interviews with local BAT representatives. This on occasion resulted in conflicting information. In several cases, it is our impression that there are unjustified or mistaken claims. Some cities claimed linkages for traditional programs which did not involve in-school youth. The cities are: Baltimore, Chicago, Cleveland*, Des Moines*, Houston*, Los Angeles, Miami (Dade County), Nashville*, New Orleans*, New York, Philadelphia, Rockford*, San Diego, and Washington D.C.

	Y	N	X	?
1.Is there linkage between apprenticeship and				
a. vocational education	5	7	1	1
b. cooperative education	7	6	0	1
c. post-secondary education	4	4	6	0
2.a.Was there linkage or attempt to establish a linkage program?	7	4	3	0
b.Why isn't there linkage? No money for staff and to motivate employers, no resources for post-secondary related education, and no jobs.				
c.Are you interested in learning about linkage and being helped to establish linkage?	10	1	3	0
3.a.Is there a policy or program to link apprenticeship with				
(1) secondary vocational education	8	4	1	1
(2) secondary cooperative education	8	4	1	1
(3) post-secondary education	3	2	8	1
b.Is there assigned responsibility to develop and strengthen the linkage program?	10	2	2	0

If "yes" please describe.
One noted "only in theory". This may be the case for more than that one. Others: voc-tech committee or Trade and Industry supervisor tries to work with the Joint Apprenticeship Council, the cooperative education teacher coordinator works with both the joint and "non-joint" advisory councils.

c.What are the occupations? Three cities, in addition to the pilot project cities, provided information. For the cities involved in the pilot program see Appendix 5.6.2. They are not included in the following: carpentry (3), masonry (2), plumbing (3), barber, tool and die maker, sheet metal worker (2), commercial food, electrical (2), painting (2), clerical, dry wall, tree surgeon, air conditioning, cabinet making, roofing, tile setting, meat cutter, small engines (20, auto mechanic (2), and electronic repair.

"X" :no response; "?": conflicting responses.

* A city involved in the 1979-81 pilot program

d. What are the barriers to maintaining linkage?
Seven responded. Most of the barriers are the same as those listed in the state responses. The ones emphasized in the cities' responses include: salaries for coordinators (5); unions indifference and sometimes opposition; poor interagency communications and cooperation; schools, businesses, students, and others who would be interested do not have information and understanding of nature and importance of apprenticeship; mobility of the student population; and the vagaries of the economy.

e. How did you or how are you trying to overcome these?
Five responded. They included: working with BAT to develop new activities and strategies, involving the unions, keep meeting with the important actors, pressuring BAT to come up with new occupations, programs and strategies, giving teacher/coordinators recognition for apprenticeship placements and conducting career fairs.

f.(and g.) What assistance would help cities that want to establish or improve linkages between apprenticeship and cooperative education and what advice would you give them?
Only five responded to these two questions. (The responses to the two questions indicate that the questions were interpreted to mean the same thing. Consequently, the responses are combined.)

Preparation and dissemination of model plans, procedures, agreements, and other materials for developing and maintaining a linkage program; seminars with both BAT (or SAC) and cooperative education people; workshop and conferences to encourage the sharing of knowledge and experiences; high level intercession with unions; information about successful programs; identification of and instructions how to develop effective key elements; technical consulting services; grants to develop liaison between LEAs and Apprenticeship Councils; recognition for coordinators who lose job sites to apprenticeships; funding for a person to develop relationships with and support from the union and business communities; and asigning vocational teachers to work part-time to develop and maintain linkages.

F-4

STATE PARTICIPATION IN COOP-ED AND APPRENTICESHIP

STATE	A COOP-80	B APPT-88	C POP-80*	A/C**	B/C	A/B
ALABAMA	13,092	2,187	3.9	3.3	.6	5.5
ALASKA	794	1,162	.4	2.0	3.0	.7
ARIZONA	7,765	2,635	2.7	2.9	1.0	2.9
ARKANSAS	6,856	974	2.3	3.0	.4	7.5
CALIFORNIA	25,352	47,871	23.7	1.1	1.7	.6
COLORADO	8,206	1,352	2.9	2.8	.5	5.6
CONNECTICUT	8,240	8,788	3.1	2.6	2.8	1.0
DELAWARE	2,611	1,005	.6	4.3	1.7	2.5
FLORIDA	47,402	6,727	9.7	4.9	.7	7.0
GEORGIA	27,651	3,827	5.5	5.0	.7	7.1
HAWAII	880	2,752	1.0	.9	2.8	.3
IDAHO	5,598	947	.9	6.2	1.1	5.6
ILLINOIS	32,755	10,002	11.4	2.9	.9	3.
INDIANA	6,987	5,047	5.5	1.3	.9	1.
IOWA	5,354	1,503	2.9	1.9	.5	3.8
KANSAS	3,725	885	2.4	1.6	.4	4.0
KENTUCKY	4,116	2,308	3.7	1.1	.6	1.8
LOUISIANA	5,932	2,389	4.2	1.4	.6	2.3
MAINE	2,113	1,497	1.1	1.9	1.4	1.4
MARYLAND	30,985	6,034	4.2	7.4	1.4	5.3
MASSACHUSET	4,380	7,112	5.7	.8	1.2	.7
MICHIGAN	18,660	12,606	9.3	2.0	1.4	1.4
MINNESOTA	5,445	4,199	4.1	1.3	1.0	1.3
MISSISSIPPI	4,074	1,309	2.5	1.6	.5	3.2
MISSOURI	----	8,028	4.9	---	1.6	---
MONTANA	2,415	559	.8	3.0	.7	4.3
NEBRASKA	2,506	688	1.6	1.6	.4	4.0
NEVADA	2,590	1,581	.8	3.3	1.8	1.8
NEW HAMPSHR	1,083	784	.9	1.2	.9	1.3
NEW JERSEY	13,040	7,642	7.4	1.8	1.0	1.8
NEW MEXICO	3,241	1,551	1.3	2.5	1.2	2.1
NEW YORK	14,158	21,053	17.6	.8	1.2	.7
NRTH CARLNA	19,837	2,057	5.9	3.4	.4	8.5
NRTH DAKOTA	556	350	.7	.9	.5	1.8
OHIO	44,105	12,377	10.8	4.1	1.1	3.7
OKLAHOMA	7,315	1,681	3.0	2.4	.6	4.0
OREGON	6,756	3,680	2.6	2.6	1.4	1.9
PENNSYLVNA	21,870	12,656	11.9	1.8	1.1	1.6
RHODE ISLND	9,000	2,250	.9	10.0	2.5	4.0
STH CARLINA	1,770	1,471	3.1	.6	.5	1.2
STH DAKOTA	1,774	348	.7	2.6	.5	5.2
TENNESSEE	9,690	4,823	4.6	2.1	1.0	2.1
TEXAS	70,000	8,078	14.2	5.0	.6	8.3
UTAH	2,556	1,429	1.5	1.7	.9	1.9
VERMONT	958	1,269	.5	2.0	2.5	.8
VIRGINIA	15,244	8,029	5.3	2.9	1.5	2.0
WASHINGTON	6,258	5,475	4.1	1.5	1.3	1.2
WST VRGINIA	3,658	1,994	1.9	1.9	1.1	1.7
WISCONSIN	8,006	5,354	4.7	1.5	1.1	1.3
WYOMING	----	190	.5	----	.4	---

NOTES: 1. 1979-1980 is the last year for which there are national statistics, by states, for cooperative-education participation. 2. There were no 1979-80 data for Massachusetts, 1978-79 data were used. 3. There were no data for Missouri and Wyoming for either year. 4. There has been a decrease in coop participation in most states since 1980, particularly in Texas.

*Population in millions ** Column A divided by Column B

PARTICIPATION, APPRENTICESHIP AND COOPERATIVE EDUCATION

COOPERATIVE EDUCATION

APPRENTICESHIP	A	B	C
	KANSAS**	COLORADO**	ALABAMA*
	KENTUCKY	IOWA*	ARKANSAS**
	LOUISIANA*	OKLAHOMA**	FLORIDA**
	MISSISSIPPI*	SOUTH DAKOTA**	GEORGIA**
X	N DAKOTA		NORTH CAROLINA**
	S CAROLINA		TEXAS**
	NEBRASKA**		MONTANA**
	INDIANA	MINNESOTA	ARIZONA*
	MASSCHSTTS	NEW JERSEY	IDAHO**
	NEW HMPSHR	NEW MEXICO*	ILLINOIS*
Y	NEW YORK	PENNSYLVANIA	OHIO*
	WISCONSIN	TENNESSEE*	
		UTAH	
		WEST VIRGINIA	
	CALIFORNIA	ALASKA	DELAWARE
	HAWAII	CONNECTICUT	MARYLAND**
Z	WASHINGTON	MAINE	NEVADA
		MICHIGAN	RHODE ISLAND**
		OREGON*	VIRGINIA
		VERMONT	

NOTES:

1. The columns and rows, e.g A,B,X and Y, are ordered in terms of the number of participants per 1000 state inhabitants as follows; For cooperative education

A: less than or equal to 1.6; B: greater than 1.6 and equal or less than 2.8; C: greater than 2.8.

For apprenticeship

X: less than or equal to .8; Y greater than .8 and equal or less than 1.2; Z: greater than 1.2

2. * States in which the ratio between participation in cooperative education and in apprenticeship is greater or equal to 2 and less than 4, i.e. the rate for participation in coop is at least twice that of apprenticeship but less than four times.

** States in which the ratio is four or greater.

3. States that are underlined were identified by state and federal observers as having outstanding cooperative education programs and capable of mounting a linkage effort.

4. There is no information about cooperative education programs from Missouri and Wyoming.

F.6.1

COOPERATIVE EDUCATION ENROLLMENT BY OCCUPATIONAL AREA AS REPORTED 1979-1980*

OCCUPATIONAL AREA	NUMBER	PERCENTAGE OF TOTAL
AGRICULTURE	21,421	4.1
MARKETING AND DISTRIBUTIVE	179,436	34.4
OCCUPATIONAL HOME ECONOMICS (PAID)	35,818	6.9
HEALTH	13,818	2.7
BUSINESS EDUCATION	105,620	20.2
TECHNICAL	2,082	.4
TRADE AND INDUSTRY	134,315	25.7
OTHERS (DIVERSIFIED)	29,621	5.7
TOTAL	522,238	100.1

NOTES:

1. 1979-1980 is the last year for which there are national data.

2. There is some question about the absolute accuracy of some of these data. We called the state coordinators in 1981. It was our impression that some reports were best estimates at the state level rather than a sum of exact counts at the local level.

3. This does not include data from four states which either failed to report anything or did not report the occupational distribution.

4. The percentages for 1978-1979 were: Agriculture 4.9; Marketing and Distributive 30.4; Occupational Home Economics (paid employment) 6.4; Health 3.2; Business Education 20.2; Technical 1.4; Trade and Industry 21.4; Others 12.

5. In the same year (1979-80) public two year colleges reported 63,013; state approved vocational technical institutes reported 3,311; and public evening and adult classes reported 7,047.

DISTRIBUTION OF SAMPLED YAP APPRENTICES

ACROSS OCCUPATIONAL GROUPS AND MAJOR OCCUPATIONAL CATEGORIES

Group/Category	Dot Code(s)	Category Percent	Group Percent
PROFESSIONAL/TECHNICAL/MANAGERIAL	001-199		7.7
Drafter	017	1.2	
Dental Assistant	079	1.9	
Floral Designer	142	1.0	
CLERICAL AND SALES	200-299		2.8
Secretary	201	1.2	
SERVICE	300-389		5.5
Child Care Attendant	359	1.4	
AGRICULTURAL/FISHERY/FORESTRY	400-599		1.3
MACHINE TRADES	600-699		60.8
Machinist	600	19.0	
Tool and Die Maker	601	8.1	
Subtotal		27.1	
Auto Mechanic	620	17.3	
Small Engine Mechanic	625	3.1	
Subtotal		20.4	
Air Conditioning Mechanic	637	1.2	
Maintenance Mechanic	638	1.5	
Subtotal		2.7	

Offset Press Operator	651	1.5	
Printer/Compositor	652	4.9	
Subtotal		6.4	
Cabinet Maker	660	1.5	
BENCHWORK	700-795		2.5
STRUCTURAL WORK	800-899		17.4
Auto Body	807	3.9	
Welder	819	3.1	
Electrician	824	1.7	
Carpenter	860	2.2	
Plumber	862	1.5	
Construction N.E.C.	869	2.0	
Subtotal		7.4	
MISCELLANEOUS	900-979		2.0

F.7.1

COMPARISON BETWEEN COOPERATIVE EDUCATION AND APPRENTICESHIP

COOPERATIVE EDUCATION	APPRENTICESHIP
1. High School Juniors and seniors	1. Beginning apprentice at least 16 years of age
2. Each student has the opportunity to choose to pursue a particular occupation	2. Full and fair opportunity to apply for apprenticeship
3. A professionally competent teacher/ coordinator with trade experience coordinates	3. Coordination usually by the sponsoring committee. Coordination is a major problem in apprenticeship. The linkage with coop-ed would improve and strengthen apprenticeship in this regard.
4. Learning occurs in two primary places, the classroom and the workplace	4. Same
5. Cooperating business appoints a qualified supervisor who participates by training, supervising, and evaluating student's progress.	5. On the job training and experience is under the close supervision of a skilled craftsman.
6. A committee comprised of representatives from business, labor, and the community oversees the operation of the program.	6. Overseeing by the sponsors, i.e labor and management and the state and federal bureaus of apprenticeship.
7. Students are paid usually at least the minimum wage.	7. Apprentices are paid usually at half the regular wage.
8. The teacher/coordinator and the supervisor develop and individualize learning plans.	8. A schedule of work processes link classroom and on-the-job learning.
9. Feedback from job performance is used to design and provide individualized classroom education.	9. Periodic evaluation of the apprentice's progress.
10. The teacher/coordinator confers periodically with the student/worker and the supervisor to coodinate classroom and on-the-job experience to ensure achieving objectives.	10. There is little of this in apprenticeship and is a strong point for cooperative education
11. Satisfactory completion is recognized by the high school diploma and a letter of recommendation from the employer, i.e. documented employability.	11. Official recogniztion for successful completion of apprenticeship.

DEFINITION OF COOPERATIVE EDUCATION

"Cooperative Work Experience Education", commonly referred to as Coop-Ed, is a learning approach used in educational programs from secondary to post-graduate education. Many educators, as well as lay people, regard all work experience sponsored by an educational institution as "cooperative education." This is a serious error which leads to denigrating Coop-Ed. Coop-Ed helps students gain competitive occupational skills at labor market standards by tightly linking classroom basic and skill education and carefully supervised on-the-job training and performance. Other school sponsored work programs have as their objectives vocational exploration for guidance purposes; to help students obtain income; to provide work experience with no relationship to in-school education; and to get students out of the school. None of these motivate students to learn or provide opportunities to acquire marketable skills. Only Coop-Ed yields "documented employability," a recommendation from a reputable employer attesting to appropriate job behavior and skills.

In Coop-Ed, classroom learning and on-the-job performance complement each other. Students take required academic subjects and classes related to their vocational program, and are provided released time from school for work experience and training. Class instruction and job experience are in the same occupation. There is continuous two-way communication between the teacher/coordinator and the work supervisor to insure that the student can perform on the job.

The teacher/coordinator teaches a related class in school, coordinates school and workplace learning, needs and opportunities, finds suitable work stations, and arranges for remedial and additional skill education if these are needed.

The teacher/coordinator develops with the employer, parents and student a training agreement which details the learning sequence for the student on-the-job and in-school, and is a primary means for assuring that the student's classroom and on-the-job learning activities are melded into a unified, effective occupational preparation program. This coordination between education and work experience is not characteristic of any other educational or training program.

School credit toward graduation is given for the combination of school and on-the-job instruction. Students are paid for their on-the-job activities by the employer, usually at the minimum wage.

Cooperative education is usually available in agricultural, business, distributive, home economics, health, trade and industrial occupations. There is also a category, diversified occupations, in which students in different occupations are supervised by the same teacher/coordinator.

The following are the most significant elements of a cooperative education program:

1. Each student-worker in the program has chosen to pursue a career in a particular occupation and to participate in cooperative work experience education.

2. Work sites are selected according to established criteria. The emphasis is upon good supervision, appropriate experience and cooperative efforts to fully qualify each student to enter and advance in the chosen occupation.

3. The teacher/coordinator, who coordinates each student-worker's in-class instruction with on-the-job training and experience, is a professionally competent teacher with demonstrated technical ability and actual business experience.

4. Learning occurs in two primary places---the classroom and workstation. These are not viewed as separate entities. The teacher/coordinator integrates them into a total learning experience for each student-worker. Instruction and experience designed to enable a student to obtain entry-level employment in any number of jobs within an occupational cluster and to advance in the occupation.

5. A committee comprised of representatives from business, industry and labor, as well as school personnel, parents and students advise, assist and oversee in the operation of the program.

6. Each cooperating business agrees to appoint a qualified supervisor who participates by training, supervising; and evaluating the progress of the student-worker.

7. The teacher/coordinator, the supervisor, and the student prepare an individualized plan, setting forth the objectives, nature and scope of the expected learning experiences, how these relate to the objectives, and whether the experiences are to take place in class or on the job.

8. The teacher/coordinator visits the cooperating business to confer with the student-worker and the supervisor to coordinate in-school and on-the-job activities for achieving the objectives in the training plan.

9. Feedback from job performance is used to design and provide individualized in-school education

10. Employers provide satisfactory student workers with either employment or letters of recommendation.

SCHOOL/WORK PROGRAMS FOR SECONDARY SCHOOL STUDENTS

CHARACTERISTIC	COOPERATIVE EDUCATION	INTERNSHIP	EXPLORATORY OCC. EXPERIENCE	WORK-STUDY	AFTER EMPLOY
School sponsored	Yes	Yes	Yes	Yes	
Major Objectives	Directed work experience and training coordinated with in school learning and monitored by teacher /coordinator	Motivate increased in-school interest in learning	Career exploration & introduction to work behavior	Income & Prevent Dropout	Income
Students must have career objective in occupational area	Yes	No	No	No	No
Jobs developed by instructors or other school related person	Almost always	Usually	Yes	Sometimes	Rarely
Class related to occupational preparation program	Yes	Sometimes	Yes	Job behavior & life experience at most	No
Coordination accomplished by related class instructor	Yes	Usually	Yes	No	No
Program administered by certified teacher-coordinator in occupational field and correlated with occupational instruction	Yes	No	No	No	No
Training agreement & training plan used	Yes	Sometimes	No	No	No
Experience, training & workplace monitored by teacher coordinator	Closely	Sometimes	No	Rarely	No
Paid employment	Yes	Not usually	Not usually	Yes	Yes
Place of employment	Limited by child labor laws & state and local education rules	Limited by child labor laws and state and local education rules	Limited by child labor laws and state and local education rules	Limited by child labor laws and state and local education rules	Limited by child labor laws
Students must meet educational & attendance standards to remain in program.	Yes	Frequently	No	Sometimes	No

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F.9

PRINCIPLES FOR REPLICATION

1. LOCAL SCHOOL DISTRICTS AND STATE EDUCATION AGENCIES HAVE PROVEN TO BE MOST APPROPRIATE SPONSORS OF APPRENTICESHIP-SCHOOL LINKAGE PROJECTS.

2. COMMITMENT TO THREE YEAR IMPLEMENTATION PERIOD HIGHLY DESIRABLE SINCE RESEARCH INDICATES THAT PROJECTS ACHIEVE OPERATIONAL MATURITY DURING THE THIRD YEAR OF IMPLEMENTATION.

3. AT STATE OR LOCAL LEVEL, ASSIGNMENT OF ONE FULL-TIME STAFF PERSON TO COORDINATE APPRENTICESHIP-SCHOOL LINKAGE ACTIVITIES APPEARS TO BE THE MINIMUM LEVEL OF COMMITMENT REQUIRED FOR SUCCESSFUL OPERATIONS.

4. USE OF EXISTING EDUCATIONAL STAFF RESOURCES (E.G., COOPERATIVE EDUCATION COORDINATORS) PROVIDES COST-EFFECTIVE EXTENSION OF ACTIVITIES OF SINGLE APPRENTICESHIP-SCHOOL LINKAGE ADMINSTRATOR/ COORDINATOR.

WEAKNESSES OBSERVED IN APPRENTICESHIP-SCHOOL LINKAGE DEMONSTRATION

1. SMALL EMPLOYERS, PREDOMINANTLY NEW TO APPRENTICESHIP, RECEIVED INADEQUATE SUPPORT FROM PROJECT STAFF OR REGISTRATION AGENCY STAFF AFTER GRADUATION OF STUDENT APPRENTICES AND THEIR TRANSITION TO FULL-TIME EMPLOYMENT.

2. CONSEQUENTLY, PROVISIONS OF THE APPRENTICESHIP STANDARDS CONCERNING RELATED INSTRUCTION AND PROGRESSIVE ADVANCEMENT OF APPRENTICES HAVE NOT BEEN OBSERVED BY ALL PARTICIPATING EMPLOYERS UPON GRADUATION OF THE STUDENT APPRENTICES.

BENEFITS CITED FOR SCHOOLS COOPERATING WITH DEMONSTRATION

1. ABILITY TO OFFER STUDENTS HIGH QUALITY EMPLOYMENT OPPORTUNITIES WHILE STILL ENROLLED IN SCHOOL.

2. ABILITY TO ACHIEVE AN INTERFACE BETWEEN VOCATIONAL TRAINING METHODS AND INDUSTRY PRODUCTION APPROACHES THROUGH SIMULTANEOUS PARTICIPATION OF STUDENT APPRENTICES IN BOTH ARENAS.

3. CONSIDERABLY ENHANCED STANDING WITH LOCAL EMPLOYERS BASED UPON ABILITY OF SCHOOLS TO REFER ENTRY LEVEL WORKERS WITH APPROPRIATE APTITUDES, BASIC TRAINING, AND POSITIVE MOTIVATION.

Exhibit 10
Summary Conclusions on Demonstration

I. Employer - School Relationship
   A. Schools receive high quality job placements for students
   B. Employers receive screening and training of entry level workers

II. Employer - Apprenticeship Relationship
   A. Students receive assurances that job has some career potential
   B. Employers receive assistance in initiating and maintaining training

III. Employer - Student Apprentice Relationship
   A. Student apprentices who stay are highly satisfied with jobs
   B. Supervisors give very high job performance ratings to student apprentices who stay

IV. Number of Years in Operation Was Most Important and Most Consistent Single Prediction of Positive Outcomes for Employers
   A. Year 1 - School linkage
   B. Year 2 - Employer linkage
   C. Year 3 - Synergy, credibility

V. Concept Replicable at Substantially Reduced Cost
   A. Cost components of demonstration projects
      1. Administrative personnel
      2. Job developers
      3. Stipends
   B. New Jersey anomaly
      1. Much lower cost
      2. Similar impacts
   C. Economic incentives
      1. Direct stipends
      2. Targeted jobs tax credit
      3. No economic incentive
   D. Only one-fourth of employers primarily motivated by economic incentives and they produce lower level of impacts

VI. Demonstration and Evaluation Accomplished their Purpose
   A. Best Feature - In-school apprenticeship
   B. Worst Feature - Stipends
   C. Most cost-effective approach involved small project staff utilizing existing staff resources

VII. Weak Points in the Demonstration
   A. Sponsors small businesses, new to apprenticeship
   B. Related instruction and progressive wage advancement do not always occur as they should
   C. Good will of individual employers and vigilance of registration agency not always adequate to offset these shortcomings

F.10

ITEMS ON COOP-ED APPRENTICESHIP RELATIONSHIPS
LOCATED IN ERIC SEARCH OF MORE THAN 5000 ITEMS

A. Files searched included:

COOPERATIVE EDUCATION/MAJ (WORK AND SCHOOL EXPERIENCES UNDER DIREC
APPRENTICESHIPS/MAJ
COOPERATIVE EDUCATION/MAJ AND APPRENTICESHIPS/MAJ
APPRENTICESHIP/DE
COOPERATIVE EDUCATION (WORK AND SCHOOL EXPERIENCE UNDER DIREC
APPRENTICESHIP/DE AND COOPERATIVE EDUCATION
APPRENTICESHIPS/DE
APPRENTICESHIPS/DE AND S6

B. ITEMS

EJ233621 CE510096
Apprenticeship Credit in High School.
DeLaurentis, John
VocEd, v55 n8 p46-47 Oct 1980
Available from: Reprint: UMI
Language: English
Document Type: JOURNAL ARTICLE (080); PROJECT
Journal Announcement: CIJMAR81
Describes the Cooperative Industrial Education Program at a New Jersey high school.

ED285010 CE048078
Alternance Training in Texas: A Preliminary Overview.
Glover, Robert W.; Shelton, Elaine
Texas Univ., Austin. Center for the Study of Human Resources.
Aug. 1987.
34P.
Sponsoring Agency: Texas Coll. and Univ. System, Austin.Coordinating Board.
Grant No.: 87-1000-1-B-3
EDRS Price - MF01/PC02 Plus Postage.
Language: English
Document Type: RESEARCH REPORT (143)
Geographic Source: U.S., Texas
Journal Announcement:RIEJAN88
A study undertaken to identify and evaluate state-of-the-art practices in alternance training used in community and junior colleges and technical institutes throughout Texas.

ED270635 CE044555
The Transition from School to Work in Crisis: Coping with Threatening Unemployment.
Heinz, Walter R.
Apr. 1986
26p.; Paper presented at the Annual Meeting of the American Educational Research Association (70th, San Francisco, CA April 16-20, 1986).
EDRS Price - MF01/PC02 Plus Postage.
Language: English
Document Type: POSITION PAPER (120); CONFERENCE PAPER (150)
Geographic Source: West Germany
Journal Announcement: RIENOV86
West Germany's "dual system" of vocational education and training (VET), similar to apprenticeships in the United States, is described in some detail.

ED267174 CE043366
School to Work Linkage--The Apprenticeship Connection.
Pfeiffer, E.W.
Dec 1985
9p.; Paper presented at the Meeting of the American Vocational Association (Atlanta, GA, December 6-10, 1985). Appended guidelines contain small print.
EDRS Price - MF01/PC01 Plus Postage.
Language: English
Document Type: PROJECT DESCRIPTION (141); CONFERENCE PAPER (150)
Geographic Source: U.S.: New Jersey
Journal Announcement: RIEAUG86
Target Audience: Practitioners
Apprenticeship that begins in secondary school, is an approach to education and training that allows high school seniors to be registered as apprentices with the U.S. Bureau of Apprenticeship and Training while completing their secondary school education.

ED238498 JC840028
University of Hawaii Community Colleges; A Guide for Apprenticeship Coordinators and Administrators.
Hawaii Univ. Honolulu. Office of the Chancellor for Community Colleges. 1983
47p.
Sponsoring Agency: Department of Education, Washington, DC.
Grant No.: G-09-77-00087
EDRS Price - MF01/PC02 Plus Postage.
Language: English
Document Type: NON-CLASSROOM MATERIAL ( )
Geographic Source: U.S.; Hawaii
Journal Announcement: RIEMAY84
Target Audience: Administrators; Practitioners
This guide presents materials prepared for college administrators of the related instruction portion of apprenticeship training programs in the University of Hawaii's community college.

ED233210 CE036736
A Cooperative Vocational Education Teacher-Coordinator's Guide to Apprentice Training.
New Jersey State Dept. of Education, Trenton. Div. of Vocational Education.
1983
65p; For a related document, see ED 226 118 and CE 036 735.
EDRS Price - MF01/PC03 Plus Postage.
Language: English
Document Type: NON-CLASSROOM MATERIAL (055)
Geographic Source: U.S.; New Jersey
Journal Announcement: RIEJAN84

Target Audience: Teachers
This guide is designed to help cooperative vocational education teachers-coordinators in New Jersey to understand the apprentice training opportunities open to their audience.

ED205801 Ceo 298747
A Comparison of Four Alternative Delivery Systems for Vocational Education: Apprenticeship, CETA, Cooperative Education, and Industrial Training.
Johnson, John A.
Johns Hopkins Univ., Baltimore, Md.
Jul 1981
79p.; Appendixes will not reproduce well due to small print. For a related document see CE 029 846.
Sponsoring Agency: Maryland State Dept. of Education, Baltimore. Div. of Vocational-Technical Education.
EDRS Price- MF01/PC04 Plus Postage.
Language: English
Document Type: RESEARCH REPORT (143)
Geographic Source: U.S.; Maryland
Journal Announcement: RIEJAN82
This study examines the following four alternatives to traditional vocational-technical high schools for delivering vocational education: apprenticeship programs, Comprehensive Employment and Training Act (CETA) programs, cooperative education, and industrial training.

ED178700 CE021927
Low Enrollment Apprenticeship Program.
Lane Community Coll., Eugene, Oreg.
1978
36p.; Some pages will not reproduce well due to light and broken type
EDRS Price- MF01/PC02 Plus Postage
Language: English
Document Type: PROJECT DESCRIPTION (141)
Geographic Source: U.S.; Oregon
Journal Announcement: RIEAPR80
This describes a solution to the problem of registered apprentices being unable to receive federally mandated related training as a consequence of low class enrollment.

ED172860 JC790397
Specialized Apprentice-Level Training Programs for Industry.
Eiling, Walter
Jun 1978
33p.; Paper presented at the International Institute on the Community College (9th, Sarnia, Ontario, June 12-15, 1978)
EDRS Price- MF01/PC02 Plus Postage.

Language: English
Document Type: PROJECT DESCRIPTION (141) CONFERENCE PAPER (150); TEACHING GUIDE (052)K
Geographic Source: U.S.; Ohio
Journal Announcement: RIENOV79
A description of Lorain County Community College's training program for the employees of the United States Steel Corporation and for the Lorain Telephone Company.

ED168619 JC790193
A Guide for Apprenticeship Coordinators and Administrators.
Carter, Reginald K.; And Others
Hawaii Univ., Honolulu. Community Coll. System.
55p.
Sponsoring Agency: Office of Education (DHEW), Washington, D.C.
Bureau No.: 504A970003
Grant No.: G097700087
EDRS Price- MF01/PC03 Plus Postage
Language: English
Document Type: NON-CLASSROOM MATERIAL (055); LEGAL MATERIAL (090)
Geographic Source: U.S.; Hawaii
Journal Announcement: RIEAUG79
Government: State
Target Audience: Practitioners
This guide was prepared to assist college administrators and apprenticeship coordinators administering the apprenticeship training programs of the University of Hawaii's community colleges.

EJ228429 JC502157
Service Learning at Daytona.
Polk, Charles H.; And Others
Community and Junior College Journal, v50 n6 p40-43 Mar 1980
Available from: Reprint: UMI
Language: English
Document Type: JOUKNAL ARTICLE (080); PROJECT DESCRIPTION (141)
Journal Announcement: CIJDEC80
Describes Daytona Beach Junior Colleges's (DBJC's) service learning concept whereby students earn academic credits through work experience.

ED226254 CE035251

Guide to Vocational-Technical Education Program Alternatives: Secondary and Postsecondary. An Introduction. Competency-Based Vocational Education Administrator Module Series.

Harrington, Lois G.; And Others

Ohio State Univ., Columbus. National Center for Research in Vocational Education.

1983

77p.; For related documents see CE 035 239-250 and note on ED 212 839

Sponsoring Agency: Consortium for the Development of Professional Materials for Vocational Education.

Report No.: ISBN-0-89606-113-2

Available From: American Association for Vocational Instructional Materials. 120 Driftmier Engineering Center. Athens, GA 30602 ($5.15).

EDRS Price - MF01/PC04 Plus Postage

Language: English

Document Type: INSTRUCTIONAL MATERIAL (051)

Geographic Source: U.S.; Ohio

Journal Announcement: RIEJUL83

Target Audience: Practitioners, Students

This guide overviews the typical vocational programs available and the general kinds of requirements involved that would have implications for program planning and budgeting. Describes six types of alternative programs: integrated occupational experience (cooperative education, capstone experiences, on-the-job training, apprenticeships, clinical experiences, internships, shadowing).

ED223175 HE0223175

Structures and Strategies for Linking the Higher Education and Employment Communities. Higher Education/CETA Project Monograph.

Clark, Donald M.; Rinehart, Richard L.

American Council on Education, Washington, D.C.

Jul 1982

10p.: For related documents, see HE 015 695--703 and HE 015 723.

Sponsoring Agency: Fund for the Improvement of Postsecondary Education (ED), Washington, D.C.

Available from Higher Education/CETA Project, American Council on Education, One DuPont Circle, Suite 800, Washington D.C. 20036.

EDRS Price - MF01/PC01 Plus Postage.

Language: English

Document Type: POSITION PAPER (120); PROJECT DESCRIPTION (141)

Geographic Source: U.S.; District of Columbia

Journal Announcement: RIEAPR83

A model for establishing or improving cooperative relationships between higher education and the employment

community.

ED200774 CE028560
Cooperative Industrial Education: The Fitchburg Plan.
Ringel, Paul Joseph
April 1981
26p ; Paper presented at the Annual Meeting of the American Educational Research Association (Los Angeles, CA April 13-17, 1981).
EDRS Price - MF01/PC02 Plus Postage.
Language: English
Document Type: PROJECT DESCRIPTION (141); RESEARCH REPORT (143); CONFERENCE PAPER (150)
Geographic Source: U.S., New York
Journal Announcement: RIESEP81
A history of the first high school cooperative course in the United States, which was established in Fitchburg, Massachusetts. Upon completion of the required hours of work, the student was documented as a beginning journeyman.

ED 189448 CE026112
Apprenticeship in the United States: Implications for Vocational Education Research and Development. Occasional Paper No. 66.
Glover, Robert W.
Ohio State Univ. Columbus. National Center for Research in Vocational Education.
Jun. 1980
23p.; Paper presented at The National Center for Research in Vocational Education (Columbus, OH, June 1980)
Available from: National Center Publications, The National Center for Research in Vocational Education, The Ohio State University, 1960 Kenny Rd., Columbus, OH 43210 ($2.20)
EDRS Price - MF01/PC01 Plus Postage
Language: English
Document Type: POSITION PAPER (120); CONFERENCE PAPER (150)
Geographic Source: U.S., Ohio
Journal Announcement: RIEDEC80
Presents the position that an alliance between apprenticeship and vocational education could accomplish more than either system could achieve on its own.

ED169997 JC790301
Occupational Program Inventory. Michigan Public Community & Junior Colleges.
Michigan State Dept. of Education, Lansing.
1979.
60p.
EDRS Price - MF01/PC03 Plus Postage.
Language: English
[illegible]

Geographic Source: U.S.; Ohio
Journal Announcement: RIESEP79
Government: State
A report of Michigan's public community and junior colleges' State Board of Education approved, federally-reimbursed, occupational education program curricula.

ED114663 CE005544
National Conference on Cooperative Education (Washington, D.C., April 3-5,1973.)
Bureau of Occupational and Adult Education (DHEW/OE), Washington, D.C. Div. of Vocational and Technical Education.
5 Apr 1973
66p.
EDRS Price - MF01/PC03 Plus Postage
Language: English
Document Type: CONFERENCE PAPER (150)
Journal Announcement: RIEAPR76
The three-day conference sought to clarify the scope of cooperative education as a plan which delivers occupational skills and to examine selected issues which would serve to stimulate expansion.

ED110810 CE004627
Report: National Conference on Cooperative Education.
Bureau of Occupational and Adult Education (DHEW/DE). Washington D.C. Div. of Vocational and Techinical Education.
5 Apr 1975
64p.: Report of the National Conference on Cooperative Education (Washington, D.C., April 3-5, 1975)
EDRS Price- MF01/PC03 Plus Postage.
Language: English
Document Type: CONFERENCE PAPER (150)
Journal Announcement: RIEJAN76
The Conference report on cooperative vocational education contains relationship to apprenticeship training.

Apprenticeship-School
Linkage Project Study
Edward Davin, Project Director
1981 CSR, Incorporated
Report
ED 217 205
Interim Report Volume I: Summary and Issues
Overview of data from initial site visits and discussion of major implementation issues.
ED 217 206
Interim Report on Volume II: Site Visit Reports
Detailed case study reports on each of eight demonstration projects.

ED 217 207
Report on Impacts
Comprehensive evaluation report based upon analyses of data derived from interviews with apprentices, comparison students and employers.

ED 217 208
Implementation Manual
Guide developed after workshops with project staff, BAT staff, and evaluacion staff in order to assist interested sponsors in implementing Apprenticeship-School Linkage projects.

ED 217 209
Supplementary Report
Comparison of outcomes from participants in Apprenticeship-School Linkage projects with participants in Youth Career Development Projects.

F.11

PUBLICATIONS FOR ADMINISTRATORS AND TEACHER/COORDINATORS OF COOPERATIVE WORK EXPERIENCE EDUCATION

The National Child Labor Committee has published* a number of manuals and guides directed toward improving CWEE and the transition from secondary school to work. These publications may be either purchased from NCLC or reprinted by educational institutions, in whole or in part, for free distribution (or at cost) to educators and cooperating organizations provided that credit is given to NCLC and the Committee is informed of the nature and extent of the distribution.

1. Presenting Cooperative Education, 1983. A how-to manual to assist teacher/coordinators to present the benefits of cooperative education to the business community and individual employers to obtain appropriate work stations for students. Includes both a general frame-work and specific ideas for getting the CWEE story across. $3.00 (41 pages)

2. Managing Cooperative Education, 1983. Presents concepts, tools and techniques useful in the management of cooperative education programs at the state, school district and school levels. Includes chapters on management, the environment, planning and controlling, human relations, directing operations, and evaluation. The manual is directed to supplementing, not replacing, "Administrative Manuals" issued by state departments of education. $3.00 (78 pages)

3. Self-Assessment Guidelines for Administrators of High School Cooperative Work Experience Programs, 1984. Designed to provide administrators and teacher/coordinators with information on which to base recommendations and plans to improve the effectiveness of cooperative work experience programs. Includes a section for developing an annual profile of student and employer participants and specific assessment questionnaires for 32 of the key elements of CWEE. The manual is not designed as a report card, but to provide information about the direction of the program and to identify potential problems and opportunities and leads for improving CWEE. $3.00 (64 pages; photocopy only)

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*Funding for preparation of these publications has been provided by the Ford, Charles Stewart Mott, Edna McConnell Clark and Atlantic Richfield Foundations. Prices for each publication are listed after each description. Our prices are designed to cover the costs for duplicating, mailing and handling.

4. Cooperative Education Programs for Students with Special Needs, 1984. Developed to meet the expressed needs of state, district and local officials and teacher/coordinators for information and techniques to design and implement successful cooperative education programs for students with special needs. Includes sections on many of the key elements of Cooperative Work Experience Education, modified for the special population and on preparing and motivating students, supervision on the job, job design, support services, examples from active programs, hints for improving programs, networking, outside resources and a bibliography. $4.00 (119 pages; photocopy only)

5. Keys to Cooperative Education Programs (two volumes), 1984. A comprehensive guide for the analysis and improvement of CWEE using the key element approach developed by NCLC after a two year study of local and state programs and consultation with educational leaders at federal, state, and local levels.

Volume I, is a general introduction to the key element approach. It includes the NCLC criteria for identifying outstanding programs, a description of the key element approach, definitions and categorization of the key elements, use of the descriptions of key elements, changing and defining new key elements to fit local programs, and the force-field analysis technique for improving a key element. $3.00 (63 pages)

Volume II, is a specific guide for analyzing and improving sixteen of the most important key elements. Each section is devoted to a single key element. Sections include definition, objective, general discussion of the nature of the element, its importance, components, and relationship to CWEE and to other elements; examples of elements in programs; hints on analysis, improvement and use of elements; other resources relating to the element; forms; and evaluation. $8.00 (300 pages - photocopy only)

6. Modules for Supervisors of Young Workers, 1984. Six independent study modules for supervisors of young workers. Each module contains theory, practical advice, case studies and case analysis, a self-test review, and a bibliography. The material was developed and tested for small businesses which ordinarily do not train supervisors. They are also useful for classroom simulations of work experience. The modules are:

A. Who's There
Interviewing Techniques for Small Businesses
(23 pages)

B. Starting Up
A Guide to Breaking in the New Worker
(19 pages)

C. Do You Hear What I Hear?
Communicating With Young Workers
(19 pages)

D. Moving Along
Developing Competent Workers
(15 pages)

E. Untying The Knots
An Approach to Problem Solving
(19 pages)

F. Why Not Me?
Women in Non-Traditional Jobs
(21 pages)

$1.50 each or all six for $7.50

7. Preparing Teacher/Coordinators to Conduct Cooperative Work Experience Education, 1986. Part I is a report, with findings and recommendations of a study made by NCLC of the competencies needed by teacher/coordinators and the academic and in-service training programs designed to help teacher/coordinators acquire and improve these competencies. Part II describes a seven course curriculum for teacher/coordinators. The courses are: Introduction, Administration, Coordinating & Integrating Activities, Improving Learning at the Workplace, Cooperative Education for Students with Special Needs, Obtaining and Using Labor Market Information and Assessment and Research. Part III is a detailed syllabus for the first of these courses, Introduction to Cooperative Work Experience Education. There are five appendices which provide additional information about the study and NCLC's key element approach. $4.00 (80 pages)

8. Hip Pocket Manual for Supervisors of Young Workers, 1984. Few supervisors have been trained in breaking in new workers and none in supervising young workers and students on what may be their first jobs. There is sufficient evidence to indicate that the quality of supervision determines the effectiveness of CWEE. This is the first manual designed to help supervisors perform this important, difficult task. The manual covers every aspect of the supervisor's job in relationship to a new worker and provides both checklists and memory aids. $3.00 (37 pgs.)

9. The Fantastic Being, 1981. A job-hunting guide for teenagers in comic book format. Includes sources of information, developing and using a checklist of information needed, preparing a letter of inquiry, preparing for an interview, a sample resume, and a puzzle designed to re-enforce learning. (The gift for correct responses to the puzzle is no longer available. The P.O. Box listed is not in use by NCLC). $.35 (16 pages)

10. Leader's Guide - Workshop for Teachers in CWEE for Students with Special Needs, 1987 A leader's guide for the conduct of a workshop designed to motivate and help special education teachers and coop-ed teacher/coordinators to increase participation of students with special needs in cooperative work experience education and to make these programs more effective. Includes a workshop outline and schedule, short lecture/discussion material, visual aides, suggestions for the conduct of the workshop, and seven appendices with additional teaching and background material.

11. Leader's Guide - Self-Assessment for Cooperative Work Experience Educati 1988. A leader's guide for the conduct of a workshop designed to motivate ar help educators involved in coop-ed to assess and improve their programs. The manual incluses a workshop outline, a schedule, short lectures and discussic materials, exercises, visual aids, suggestions for the conduct of an adult professional workshop and two appendices related to the conduct of a worksho

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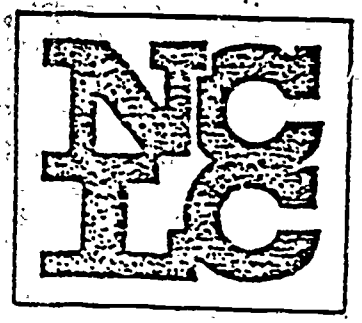

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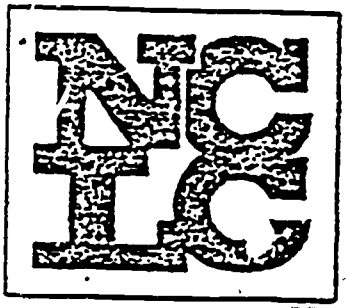
EVERYBODY

BENEFITS

FROM

COOPERATIVE EDUCATION



EVERYBODY BENEFITS FROM COOPERATIVE WORK EXPERIENCE EDUCATION

I. What is Cooperative Work Experience Education?

Cooperative Work Experience Education is a planned educational program which combines classroom study with periods of paid, career related work. It was initiated in 1906 by Herman Schneider, a University of Cincinnati professor for engineering students and quickly adapted for high school students. While then, as now, many students worked part-time, these jobs did not relate to their education or prepare them to enter full-time employment. This novel approach allows students to earn money in a job that will enrich their educational experience, increase work related competence and improve job opportunities.

II. Some Student Benefits

Cooperative work experience education helps students in a number of ways. A major benefit is that the program enhances a student's career development. Students learn what is involved in their chosen career and can try various related jobs. They also acquire skills and experience related to their career objectives. Cooperative Work Experience Education has proved successful in accomplishing these goals.

Students who succeed in cooperative education programs get letters of recommendation from their employers and have a better chance of finding meaningful employment after graduation. A number of national studies comparing the experiences of co-op and non-co-op graduates found that significantly more of the co-op graduates felt well-informed about post-graduation job opportunitites and highly prepared for their first jobs. Graduates of co-op programs have a better understanding of the workplace, greater certainty about their career choice, increased work related competencies and more experience in the skills involved in searching for a job. They also have the opportunity to determine — in a non-threatening situation — whether they want to work for a specific company after graduation. Many co-op students (four out of ten nationally) continue to work for their former co-op empoloyers after graduation.

Besides gaining valuable career related experience, students in co-op programs earn salaries. Co-op income varies according to a number of factors — including vocational area, number of terms with the same co-op employer, and type of employing organization. Most important, very few cooperative education students drop

IV. Some Benefits to Society

Society is the ultimate benefactor of the benefits experienced by students, schools and employers who participate in cooperative education.

Two of the major benefits are that co-op motivates young people to stay in school and opens up opportunities for many who otherwise might not get a diploma or a job after graduation. By working while in school, in positions that are related to their studies, students who might not otherwise be employable prove that they can perform on a job.

Another important result of cooperative education that has a very positive impact on society is the value of co-op earnings. A typical secondary school co-op student earns almost $1,600 per year. Given the current estimate of the number of co-op students in the country -- 600,000 -- this represents annual earnings of close to $1 billiion. Aside from helping the students and their families, these wages add a significant amount to federal and state tax income. The economic value of cooperative education is experienced on a much broader level than of the individual student.

Cooperative education has created strong ties between secondary education and business and industry. In an increasingly service oriented and technological society, industry more and more will be looking to secondary education for help in meeting their human resource and training needs without increased labor costs. It helps us to remain competitive in the world markets.

By increasing the numbers of employable young people in the community, cooperative education makes the community more attractive for businesses and reduces the number of persons dependent on government support for survival.

V. Some Benefits To The Educational System

CWEE is clearly better and necessary education for the 80% of young people who do not go on to higher education and is highly desirable for all students.

For the first group it provides planned, guided and, coordinated (and to a degree protected) learning experience in the occupation of choice using "state of the art" equipment, processes and concepts; opportunities to experience and learn how to relate effectively

Education, has been one of the most successful aspects of vocational education. The distinguishing characteristics of Cooperative Vocational Education are that the program is jointly planned, structured, and supervised. Further, it involves a written agreement between the school, employer, and student that outlines the planned learning experiences. Cooperative Vocational Education programs have high job placement records, and both students and employers express more satisfaction with this approach to field based learning than any other."

VI. For more information on Cooperative Work Experience Education, please contact:

—Your local school district

—Your state department of education

—The National Child Labor Committee
Room 1111, 1501 Broadway
New York, New York 10036
(212) 840-1801