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ABSTRACT

A North Carolina project identified the elements influencing an institution's responsiveness to industry and developed a model to improve the efficiency and effectiveness of that response. Data were collected through structured interviews at each of 15 top-rated colleges and with representatives of two industries with whom the college had worked. Responsiveness models were generated using the findings, a literature review, and project advisory committee inputs. Major findings were presented at three regional dissemination workshops. Implementation strategies were discussed, and subjective evaluation of the models were secured from experienced personnel who attended. Nineteen elements affecting institutional responsiveness to industry were identified as being of "some" to "extreme" importance. The top six elements referred specifically to college commitment, policy, and/or activities that included reliability of the institution, strong personal commitment of the president to industry training, high quality of instruction provided, quick response and follow-through by the institution, tailoring of courses to meet specific industry needs, and flexibility of the institution. (Six figures show the participating colleges, weighted listing of elements, elements placed in six major factors, levels of responsiveness of institutions based on the factored elements and the services provided, and the combined responsiveness model.) (YLB)

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A MODEL FOR IMPROVING THE RESPONSIVENESS OF TECHNICAL AND COMMUNITY COLLEGES TO THE TRAINING NEEDS OF INDUSTRY

by

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The State of North Carolina is committed to providing a positive climate for business and industry. A major component of this commitment is the provision of skills training through the 58 institutions in the State Community College System. During the past 20 years, substantial resources have been committed to extensive vocational-technical curriculum programs, extension courses, and customized training for industry. In an effort to improve the system, the Department of Community Colleges in 1981 listed "responsiveness to industry" as one of its research priorities. This report summarizes a study conducted in 1982 which addressed that priority area.

The primary purposes of this project were to identify the elements influencing an institution's responsiveness to industry and to develop a model to improve the efficiency and effectiveness of that response. Specific objectives of the project were to: identify the elements that enhance a technical or community college's ability to respond to the personnel training needs of industry; synthesize a model by which a postsecondary institution may increase its level of responsiveness; design professional development opportunitites for college personnel responsible for industry relationships; identify policy considerations necessary to implement changes in the system; propose a long-range research program in the area of college-industry relationships; and examine possibilities for articulated relationships between institutions in the Community College System and a major research university.

The project staff assembled twelve advisory committee members representing industry, community college administrators, and the Department of Community College staff. This advisory group met quarterly to help guide the development of the project.

A nomination/self nomination process was utilized to identify participant colleges. Presidents at the constituent institutions were asked to nominate two schools known to respond well to the training needs of industry. From a list of 41 nominations, 15 top-rated schools were chosen and asked to provide data. These are shown in Figure 1.

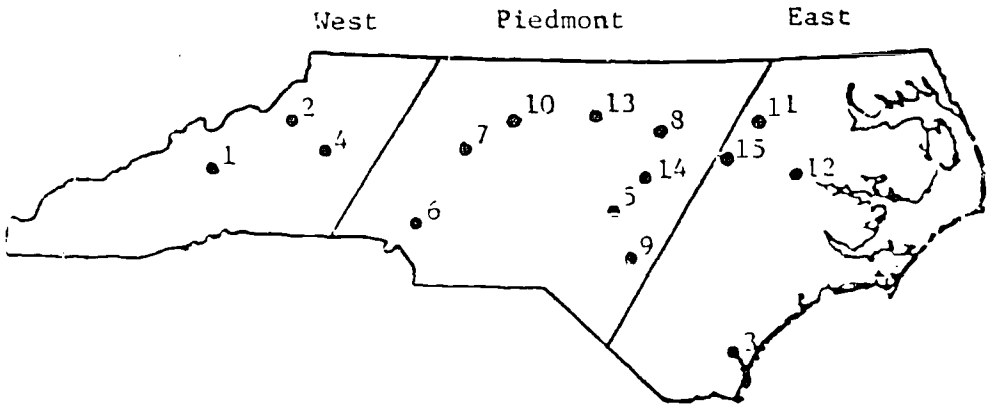
Project staff members visited each institution twice -- first to develop the data gathering instruments, then to conduct the data collection through structured interviews. During the second visit, interviews were also conducted with representatives of two industries with whom the college had worked.

Data were processed and analyzed by computer. Non-quantitative responses were transferred to individual cards to facilitate sorting, grouping and recording on tables. Responsiveness models were generated utilizing the findings, the review of literature, and inputs from the project advisory committee.

Three regional dissemination workshops were conducted at locations in the three geographic regions of the State. Major findings were presented, implementation strategies were discussed, and subjective evaluation of the models were secured from experienced personnel who attended. A slide-tape presentation and copy of the interim report were also presented at the workshops.

The sample institutions enrolled 40% of the students in the entire system. A variety of programs were offered to meet the needs of industry. Institutional coordinators of industry training averaged eight years in their positions; their counterparts in industry averaged less than four years.

Figure 1. North Carolina community and technical colleges involved in the Responsiveness-to-Industry study.



Key:

1. Asheville-Buncombe Technical College, Asheville
2. Caldwell Community College and Technical Institute, Lenoir
3. Cape Fear Technical Institute, Wilmington
4. Catawba Valley Technical College, Hickory
5. Central Carolina Technical College, Sanford
6. Central Piedmont Community College, Charlotte
7. Davidson County Community College, Lexington
8. Durham Technical Institute, Durham
9. Fayetteville Technical Institute, Fayetteville
10. Guilford Technical Institute, Jamestown
11. Nash Technical College, Rocky Mount
12. Pitt Community College, Greenville
13. Technical College of Alamance, Haw River
14. Wake Technical College, Raleigh
15. Wilson County Technical College, Wilson

The industries reported using the colleges for upgrade training in 83% of the cases, for new industry training, 66.6% , and in training for expansion, 36.7% . Occupational education programs, extension, and customized industry training programs had a high priority in the institutions studied. Benefits of the joint training programs to the college, industry and community were viewed somewhat differently by college and industry respondents. They also differed in preferred means of contact: industry representatives favored personal visits while college representatives preferred telephone contacts.

Policy changes recommended by college coordinators included full participation by all divisions, giving FTE credit for industry training, and freeing the coordinator for industry training of unwarranted restrictions.

College coordinators saw industrial experience as a prerequisite to their success; they also identified human relations skills, communication skills, administrative ability, pedagogical skills and knowledge of the role of the community college as important activities.

Possible joint activities between the colleges and a major university involved preparation of instructors/coordinators, designing high technology courses, management training, and articulation.

Nineteen "elements" were identified as being of "some" to "extreme" importance. College and industry respondents were in general agreement on the elements list (correlation coefficient of .733, p=.0001). The top six elements identified referred specifically to college commitment, policy and/or activities which included: (1) reliability of the institution (to do what was promised); (2) strong personal commitment of the president to industry training; (3) high quality of the instruction provided; (4) quick response

and follow-through by the institution; (5) tailoring of courses to meet specific industry needs; and (6) flexibility of the institution (to meet the unusual needs of industry). Figure 2 shows the complete weighted listing of elements. The elements were placed in six major factors. These are shown in figure 3. Next, institutions were analyzed for level of responsiveness based on the factored elements and the services provided. Figures 4 and 5 show these levels of responsiveness. Finally, the program planning process was utilized to develop a series of steps in improving responsiveness of institutions. This combined model is depicted in figure 6.

Educational agency involvement in industrial training at the plant level is a relatively new phenomenon in the United States. Faced with the demands of a rapidly changing technology, an economy in recession, and high unemployment, the nation must move to change old patterns of operation by educational systems. The community college appears to offer the best way to meet this challenge in the immediate future. Unfortunately, relatively little is known about how this unique institution can most effectively respond to the nation's industrial training needs. This study of one state's system is a start toward understanding and improving the system.

Figure 2. Weighted model* of elements affecting institutional responsiveness to industry.

1. Reliability of the institution (to do what was promised)
2. Strong personal commitment of the president to industry training
3. High quality of the instruction provided
4. Quick response and follow through by the institution
5. Tailoring of courses to meet specific industry needs
6. Flexibility of the institution (to meet the unusual needs of industry)
7. Special funding through the New and Expanding Industry Program, Department of Community Colleges
8. One or more staff members working full-time coordinating industry training
9. Continuing close and cordial relationships with industry representatives
10. A major purpose/focus of the institution (to serve industry)
11. Regular institutional funding for industry training
12. Regular, persistent, personal contacts with industry by the institutional coordinator
13. Regular faculty members with knowledge of and commitment to industry training needs
14. Industrial experience of key personnel (coordinator and instructors) in the institution
15. Active institutional advisory committees having representatives from industry
16. The amount of industrial activity in the area
17. Regular campus facilities made available to area industry
18. A special training facility (on or off campus) designated for exclusive use by industry
19. Institutional communications to industry (direct mailings, newsletter, brochure, newspaper, etc.)

*NOTE: Elements were rated by 15 college representatives and 30 industry respondents during the summer of 1982; all elements received at least a 2.73 on a four-point scale of 1 = little importance; 2 = some importance; 3 = much importance; 4 = extreme/critical importance; the elements are listed in descending order of importance.

INSTITUTIONAL COMMITMENT

12. Flexibility of the institution (to meet the unusual needs of industry)
13. Reliability of the institution (to do what was promised)
14. Quick response and follow through by the institution
16. A major purpose/focus of the institution (to serve industry)
    . Commitment of the Board of Trustees
    . Mutual understanding of institution's mission and limitations
    . Thoroughness in planning, evaluation and follow-up

INSTITUTIONAL COORDINATION

5. One or more staff members working full-time coordinating industry training
9. Regular, persistent, personal contacts with industry by the institutional coordinator
    . Provision for released time (of coordinator)
    . Administrative level of institutional coordinator: should report directly to the Dean of Instruction
    . "Quality" of institutional coordinator

INDUSTRIAL RELATIONSHIPS

10. Institutional communications to industry (direct mailings, newsletter, brochure, newspaper, etc.)
11. Active institutional advisory committees having representatives from industry
15. Continuing close and cordial relationships with industry representatives
17. The amount of industrial activity in the area
    . Community support of institution (industrial development)
    . Use of resource personnel from industry
    . Involvement in recruitment of industry to the area

CURRICULUM AND INSTRUCTION

7. Industrial experience of key personnel (coordinator and instructors) in the institution
8. Regular faculty members with knowledge of commitment to industry training needs
18. High quality of the instruction provided
19. Tailoring of courses to meet specific industry needs
    . Internal communications/cooperation
    . Concentrating on fundamentals in curriculum (training programs)
    . Up-to-date, competency based curriculum

FACILITIES/EQUIPMENT

3. A special training facility (on or off campus) designated for exclusive use by industry
4. Regular campus facilities made available to area industry
    . Campus resources available to industry
    . "Hi tech" equipment (loaned/donated by industry)

FUNDING

1. Special funding through the New and Expanding Industry Program and/or Cooperative Skills Program, Department of Community Colleges
2. Regular institutional funding for industry training

*NOTE: Factors were derived logically, using the 19 items rated by the 45 respondents, plus additions suggested by the Project Advisory Committee. The additions are not numbered.

Figure 4. Three levels of responsiveness to industry based on the factored elements list.

LEVELS OF RESPONSIVENESS

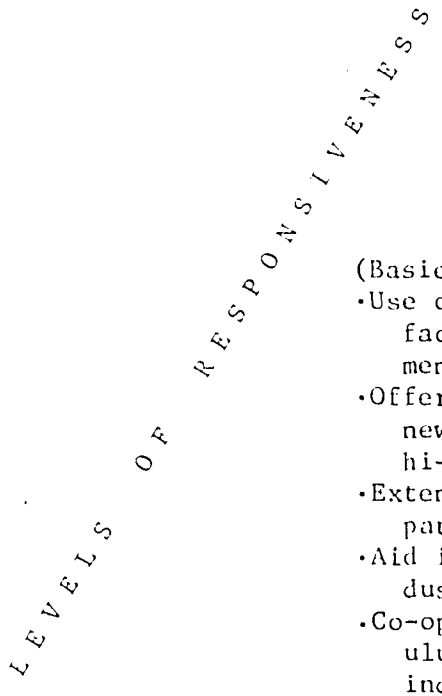
ADVANCED
(Basic and Intermediate responsiveness plus)
- Major commitment to serving industry -- spelled out in school goals and objectives
- Coordination by one or more full-time personnel
- Close Relationship with area industry through personal visits, communications, social contacts, etc.
- Instruction aimed primarily at serving industry with highest quality tailored courses
- Regular and Special Facilities designated for industry training; hi tech equipment
- Utilize Regular and all available special funds

INTERMEDIATE
(Basic responsiveness plus)
- Some commitment to industrial training as indicated in the written policy of institution
- Coordination by personnel part-time for industrial relations
- Active Relationships with area industry through advisory committees, recruitment, co-op, equipment loan
- Curriculum & continuing education programs geared to industry needs
- Industry given priority for use of campus facilities
- Use regular funding plus some special funds to train for industry

BASIC
- Concern for industry as part of the community
- Coordination by existing personnel
- Industrial Relations a part of community/public relations
- Curriculum Programs keyed to community/industry needs
- Facilities open to community use, including area industry
- Utilize regular FTE-generating funding

NOTE: Any institution in the State may find itself at different levels with respect to each factor, or in a transition stage between levels.

Figure 5. Three levels of responsiveness to industry based on services provided.



ADVANCED
(Basic & Intermediate services plus)
- Initiates new and expanding industry program
- Co-op skills training program
- In-plant, upgrade training courses (non-credit)
- Extensive communications with area industry

INTERMEDIATE
(Basic services plus)
- Use of college teaching facilities & equipment
- Offers special programs: new & expanding industry, hi-tech, consulting, etc
- Extension classes in occupational subjects
- Aid in recruitment of industry to the area
- Co-op positions for curriculum students in area industry
- Miscellaneous services/ programs for/with industry

BASIC
- Regular curriculum programs in Occupational Education
- Continuing education on-campus classes in occupational subjects
- Use of general college facilities by community/industry
- Job placement service for graduates
- Complies with requests for new and expanding industry training programs

NOTE: An institution desiring to analyze itself in relation to this model may find itself at different levels with respect to each service, or in a transition stage between levels.

Figure 6. Combined responsiveness model

Step 1.

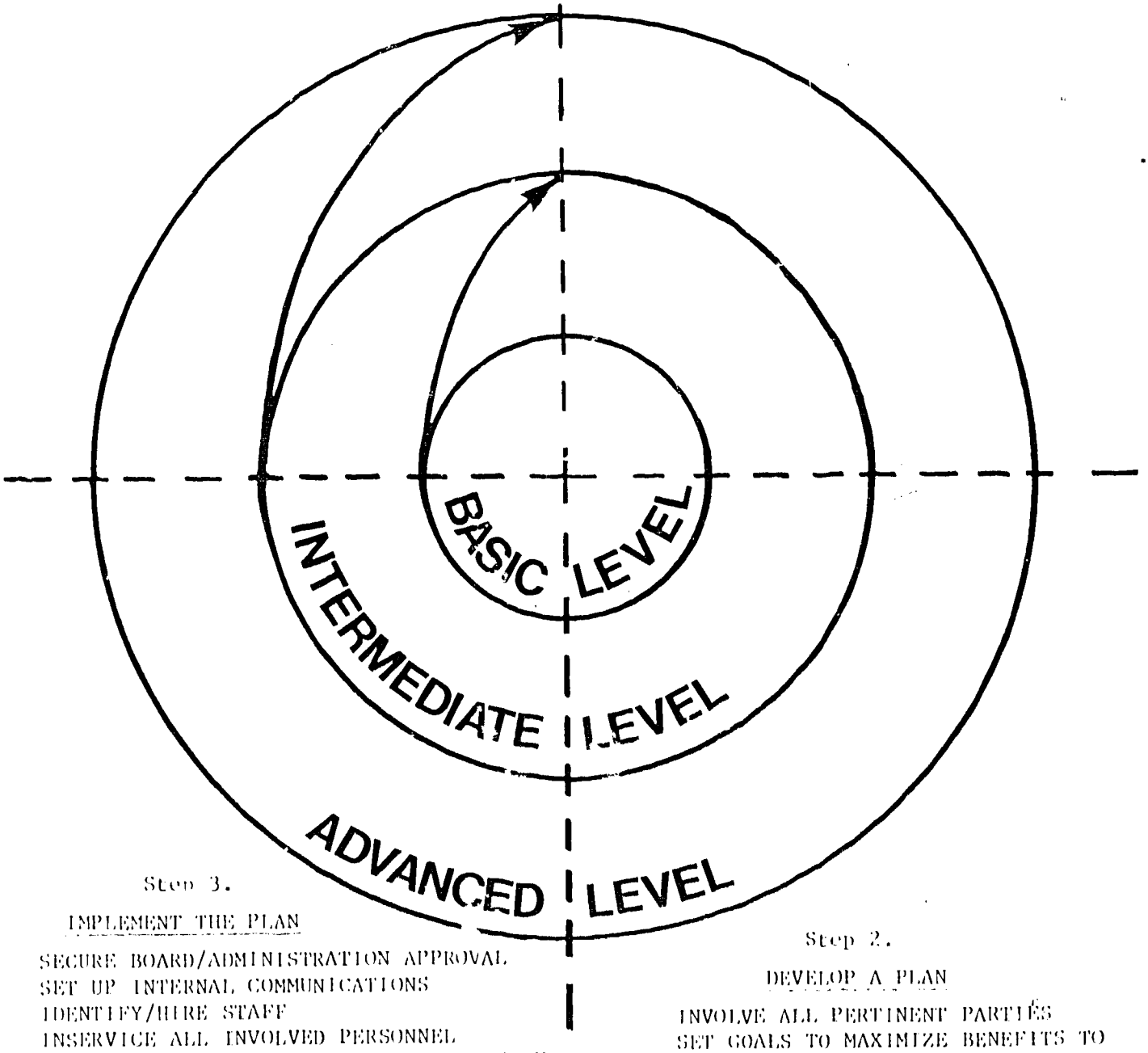
ASSESS THE SITUATION

ANALYZE STATE COMMITMENT TO INDUSTRY
DETERMINE INSTITUTIONAL COMMITMENT
REVIEW EXISTING PROGRAMS (CURRICULUM & CONTINUING EDUCATION/EXTENSION)
DETERMINE EXTENT OF AREA INDUSTRY
ASCERTAIN NEEDS OF INDUSTRY FOR TRAINING
REVIEW SUPPORT SERVICES AVAILABLE AT COLLEGE
DETERMINE OTHER RESOURCES AVAILABLE

Step 4.

EVALUATE AND RECYCLE/MODIFY

PROVIDE FOR FREQUENT EVALUATION
ALLOW FEEDBACK
EVALUATE PROCESS AND PRODUCTS
DETERMINE ADJUSTMENTS NEEDED BASED ON RESULTS



Step 2.

DEVELOP A PLAN

INVOLVE ALL PERTINENT PARTIES
SET GOALS TO MAXIMIZE BENEFITS TO INDUSTRY, COLLEGE AND COMMUNITY
IDENTIFY STRATEGIES
DESIGNATE PERSONNEL
PLAN AWARENESS STRATEGIES (PR)
ANTICIPATE DATA NEEDS FOR EVALUATION
IDENTIFY QUALITY CONTROL MEASURES

Step 3.

IMPLEMENT THE PLAN

SECURE BOARD/ADMINISTRATION APPROVAL
SET UP INTERNAL COMMUNICATIONS
IDENTIFY/HIRE STAFF
INSERVICE ALL INVOLVED PERSONNEL
IDENTIFY KEY PERSONNEL IN AREA INDUSTRY
SECURE/ALLOCATE SUPPLIES AND EQUIPMENT
DEVELOP AND DISTRIBUTE WRITTEN POLICIES/PROCEDURES
IMPLEMENT AWARENESS STRATEGIES
MAKE A COMMITMENT TO QUALITY
DELIVER SERVICES