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ABSTRACT

In North Dakota, a statewide assessment was made of compliance with Public Law 101-392 (the Carl D. Perkins Vocational and Applied Technology Education Act) through questionnaires completed by 171 secondary school administrators (representing 77 percent of the 211 secondary schools in North Dakota), in 1991. The assessment showed that secondary schools need to be more involved in applied activities that integrate academics and vocational education. A need for policies that award science and mathematics credits for such integrated courses also was shown. In addition, linkages between secondary and postsecondary schools and subsequent articulation agreements need to be encouraged throughout the state, and secondary schools should enhance the placement activities that are directly related to their vocational programs. There is also a need for schools to develop written plans to improve the quality of programs, to replace equipment in order to provide state-of-the-art training, and to identify labor market competencies for each vocational program. The assessment showed that teachers are following the state-recommended curriculum, that most counselors have policies for scope and sequence in courses with students, and that schools are using critical thinking and problem-solving skills in their vocational programs. (KC)

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NORTH DAKOTA

VOCATIONAL—TECHNICAL
EDUCATION

SUMMARY

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STATE

ASSESSMENT

FOR

PUBLIC LAW 101-392

1991

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Executive Summary

The data for this statewide assessment was gathered from questionnaires completed by 171 secondary school administrators or their designates. It was a substantial sample representing 77% of the 211 eligible secondary schools in North Dakota. Only two (20%) of the ten postsecondary schools replied, so this portion of the assessment was deferred pending another arrangement. The procedures for this assessment were in accordance with guidelines set forth by the Carl D. Perkins Vocational and Applied Technology Education Act of 1990. The assessment period was initiated during January 1991 and concluded during March 1991.

The assessment shows that secondary schools need to be more involved in applied activities which integrate academics and vocational education. There also is a need for policies which award science and math credits for such integrated courses. Linkages between secondary and postsecondary schools, and subsequent articulation agreements, need to be encouraged throughout the state. Likewise, secondary schools should enhance the placement activities which are directly related to their vocational programs. Labor market competencies should be identified in each vocational program. There is also a need for schools to develop written plans for improving the quality of programs and for replacing equipment in order to provide state-of-the-art training which revitalizes vocational education programs.

This assessment has limitations. For instance, it is likely that respondents have different interpretations or definitions for such topics as competency-based curriculum. Although assessment data shows that slightly over half (55%) of the schools utilize competency-based vocational education, and there are 182 such programs (62%) in operation, a closer analysis could show these programs do not embrace the concept of mastering an objective before advancing to the next objective.

The assessment shows teachers are following the state-recommended curriculum or they have identified competencies in their curriculum. Likewise, most counselors have policies for scope and sequence in courses or with students. The schools are utilizing critical-thinking and problem-solving skills in their vocational programs. This is also true regarding application and reinforcement of basic skills.

Summary of Assessments Findings

The assessment focused on features which are in accordance with the Carl D. Perkins federal legislation. They are important for building a quality workforce in the United States that is skilled, competent, and able to meet the strategic workplace needs so our nation can compete worldwide.

The North Dakota State Board for Vocational Education designed the survey questions with the intent to delve into perspectives, policies, and procedures of the 231 secondary schools and postsecondary institutions of this state. The results are to be used for making policy decisions to administer the vocational education programs in the state's secondary and postsecondary schools.

Only two postsecondary schools returned the questionnaire; another wrote a letter suggesting the questionnaire context appeared not to apply to postsecondary schools; and the other seven institutions did not respond. Another type of approach to assess the postsecondary institutions may be needed to elicit a response.

Consequently, the data gathered during this assessment pertains only to the secondary schools of North Dakota. The rate of return was 77%. This return is deemed to be a significant sample to adequately represent the opinions of school officials within this population of North Dakota. The following summarizes these findings:

Demographic Section

Table I shows answers taken from the assessment's demographic section. The questions inquire into the number of teachers, counselors, and type of cooperative, if any. This data helps describe the size and scope of involvement in regard to the population returning the questionnaire.

Table 1
A demographic profile of the schools responding to the assessment

Questions	Data provided by respondents	*Number of schools answering	**Percent of all returns
A. Non-vocational or academic teachers (F. T. E.)***	4,992	160 (100%)	94%
B. Vocational teachers (F. T. E.)	582	156 (98%)	91%
C. Schools employing counselors	146	155 (91%)	90%
D. Schools cooperating in vocational centers or cooperatives	302	137 (86%)	80%

*171 (77%) of the 221 secondary schools solicited returned the assessment form.

**Returns divided by those responding

***Full-time equivalent

Section I - Integration

A. Integration of academics and vocational education

The inquiry into the extent the schools integrate academics and vocational education provided evidence that very few academic teachers are involved in such activity. However, it was reported that nearly half or 43 percent of the vocational teachers were involved in the activity of integrating academics in their curriculum. A similar pattern exists for in-service activities in this regard.

B. Integration policy for reinforcement of basic skills

The assessment data shows that awarding of science and mathematics credit in high school for vocational courses based on science and mathematics has not been accepted in North Dakota. However, a large percentage (84%) of these same secondary schools report they support the application and reinforcement of basic skills.

Section II - Sequence toward academic and occupational competencies

The data gathered indicates a majority (62%) of the vocational teachers are using the recommended scope and sequence for vocational and academic courses in their programs.

The same held true for the report regarding counselors' activities except the percent (82%) involved is much greater.

Section III Policy information on current or subsequent job placement

Administrators are nearly evenly divided in opinion as to whether the structure of their programs meets competency-based criteria. This speaks to the level of vocational students' work skill attainment with current or subsequent job placement. One-fifth of these schools responding indicate they provide formal skill certification. A third indicate they provide job placement activities. However, close to half (45%) report they have a system in place which gathers follow-up information with graduates.

Very few schools (10%) provide any type of placement goal for their students, and among these schools that do, they report a placement goal averages 39%. A quarter of these schools (26%) claim they have a policy for an individualized plan for students. Approximately 8 percent of the vocational staff is reportedly involved with such placement activities.

Section IV - Articulation agreements between secondary and postsecondary

Few policies and procedures were found regarding program linkages between secondary schools and postsecondary institutions. The number of articulation agreements between these agencies amounts to 78 which represents 23 percent of the schools returning the questionnaire. The number of schools making an attempt to establish such linkages amounted to 14 percent of those responding. School administrators made no reference to this area in their comments. The same holds true concerning the responses pertaining to formal written agreements with adult education programs.

There were few attempts made by secondary schools to establish linkages for credit with postsecondary schools.

Section V - Workplace skills incorporated in instructional programs

The assessment population consisted of 582 vocational teachers involved in 409 reported programs. Among these respondents, only 69% to 76% reported an affirmative answer to exposing students to programs designed to meet employability skills, technical skills, safety, and planning. Only half of these schools claim they meet the needs of the industry and/or the workplace by exposing students to production skills, equity in the workplace, and management.

Also, 40% and less of these respondents claim they expose students to skills such as finance, health, selecting and succeeding in non-traditional programs, labor issues, and underlying principles of technology.

Section VI - Issue about lack of funds to meet special needs

Less than half of the schools answering felt they were unable to provide special populations services due to lack of resources. The following ranking shows the degree to which these schools indicated the problem of funding is not a problem for special needs services:

1.	Special instructional materials	43%
2.	Teacher aides and/or paraprofessionals	43%
3.	Number of vocational education teachers who have had sufficient training in meeting the needs of special populations	41%
4.	Tutors, notetakers, and/or interpreters	34%
5.	Separate vocational class service coordinator	29%
6.	Vocational assessment	29%
7.	Supplemental placement and transition services	32%
8.	Child care	32%
9.	Lab fees and/or supplies	31%
10.	Equity in-service plan for their personnel	23%
11.	Transportation	17%
12.	Equity action plan for their district (agency)	16%

Section VII - Economically disadvantaged and low-achieving students

Only 20 percent of the schools have a written plan for improving quality of programs to serve the economically disadvantaged and low-achieving students.

Fourteen percent of the schools responding have a written plan for replacing equipment to meet the state-of-the-art training needs for these students.

Section VIII - Extent to which labor-market competencies are included in programs

The focus of this portion of the assessment is on the extent to which these programs reflect a realistic assessment of current and future labor market needs, including the needs in the area of emerging technologies. The following was found in this regard:

1. Ninety-five percent of the vocational education programs follow the recommended curriculum or the identified competencies.
2. The following ranking provides an indication as to the degree to which the responding schools felt a labor market demand exists for their programs:
 - a. Office education 49%
 - b. Agriculture 48%
 - c. Trade and industry 42%
 - d. Health 32%
 - e. Occupational and home economics 31%
 - f. Marketing education 26%
 - g. Other 15%

Section IX - Meeting the demands of the workforce

The respondents were asked to indicate, according to their professional judgment, whether certain components of their program were relevant and current to meet the demands of the workforce. These components pertain to curriculum, equipment, and instructional materials.

The following answers were categorized accordingly, and then ranked to show the percentage of the survey population providing an affirmative response in this regard:

- A. Ranking whether schools feel their vocational curriculum meets the demands of the workforce:
 1. Consumer homemaking 78%
 2. Office education 76%
 3. Industrial arts and/or technology education 65%
 4. Agriculture 56%
 5. Occupational home economics 36%
 6. Health 34%
 7. Trade and industry 32%
 8. Marketing education 29%
 9. Other 11%

B. Ranking whether schools feel their vocational equipment meets the demands of the workforce:

1.	Consumer homemaking	74%
2.	Office education	64%
3.	Industrial arts and/or technology education	56%
4.	Agriculture	49%
5.	Trade and industry	38%
6.	Health	33%
7.	Marketing education	20%
8.	Occupational home economics	15%
9.	Other	5%

C. Ranking whether schools feel their instructional material meets the demands of the workforce:

1.	Consumer homemaking	79%
2.	Office education	77%
3.	Industrial arts and/or technology education	67%
4.	Agriculture	57%
5.	Trade and industry	56%
6.	Health	52%
7.	Marketing education	27%
8.	Occupational home economics	11%
9.	Other	9%

Section X - Basic and higher-order teaching skills

The assessment attempted to inquire into whether the schools are involved in the principles and practices of effective teaching. The focus was on areas which complement the basic and higher-order individual student characteristics. The following indicates the extent to which the schools feel they accommodate such in their education and training practices in order to assess current and future workplace competencies that reflect the hiring needs of employers.

A. Utilization of competency-based vocational education

Fifty-five percent of the schools indicated they are involved in competency-based activities in their vocational education programs. This was in regard to assessing current and future workplace competencies that reflect

the hiring needs of employers. There were 172 programs in the 98 (64%) schools answering yes among 171 schools which responded to this inquiry.

B. Utilization of critical thinking and problem-solving skills

Eighty percent of the schools indicated their vocational education programs utilize critical thinking and problem-solving skills. There were 256 programs in the 116 (76%) schools answering yes among 171 schools which answered the question.

C. Utilization of workplace basics as part of the curriculum

Only 41 percent of the schools responding indicated they provide workplace basics in their vocational education curriculum. There were 137 programs in the 89 (58%) schools answering yes among 171 schools which answered the question.

Section XI - Future plans for adding vocational teachers or counselors

Sixteen schools (10%) indicated they are planning to acquire vocational teachers or counselors in the near future. The following summarizes the number and types of comments the respondents made when concluding this session of this assessment:

Expanding or enhancing programs	28
Cooperatives and consortia developments	23
Technological responses	17
Funding issues	11
Managing decline or status quo	7
Interactive television	4
Questions about instrument	3