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ABSTRACT

An overview of the issues, problems, successes, weaknesses, and implications of the process of preparing teachers for vocational education, the report contains discussions of the origin and evolution of teacher preparation, the professional development concept, nature of programs, management of teacher preparation, special problems, and future needs and opportunities. The data base for the report includes the two reports of Project Baseline, unpublished data, and supplementary data. A section on vocational teacher education tabulates and discusses the need for teachers in vocational education, as reflected by enrollment; the supply of teachers; the components of vocational teacher education; the performers of that education, and the quality. The management of teacher preparation is examined, and special problems are identified: the recurring problem of an inadequate data base, the competency question, the need for a realistic view of scale and balance, and the problem of training focus. Future needs and opportunities are couched within a framework of policy, program scope, and program credibility. (MW)

THE PREPARATION OF TEACHERS FOR VOCATIONAL EDUCATION

Project Baseline Supplemental Report

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The points of view and opinions stated herein are those of the author and do not necessarily represent the views and opinions of Technical Education Research Centers, Inc., Project Baseline or Northern Arizona University.

ABSTRACT

This report examines the issues, problems, successes, weaknesses and the implications of those in the process of vocational teacher education.

It identifies the inadequacies of the data base for Vocational Education as well as for professional development, and it specifies some of the obvious voids as well as the major needs. The origin and evolution of teacher education is chronicled while highlighting the fragile nature of its institutional base and some recent attempts to strengthen it.

Elaborating the professional development concept, the report refers to its potential in the context of general policies and policy development. Contrasts are shown between an acceptable Vocational Education/human resource policy and the policies now operating. Described are the assumptions related to vocational teacher preparation, assumptions which operate implicitly throughout the system and may be regarded as disjunctures between operating programs and legislated intent.

Operating programs are described including the balance and distribution of such programs. Often these are interpreted as demand for which there is a stock and flow of teachers often regarded as the supply. Both are described along with a discussion of the components of teacher education and the problems of component balance. Also described is the importance of the incentives available to those enrolled in various types of teacher education.

The performers in vocational teacher education, those who function at Federal, State, and institutional levels are identified along with the problems of coordination among them.

Program quality, including the flexing standards of certification and accreditation, are highlighted along with the management problems of teacher education.

Special problems identified include the recurring problem of an inadequate data base, the competency question, the need for a realistic view of scale and balance and the problem of training focus. Future needs and opportunities are couched within the framework of policy, program scope and program credibility.

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INTRODUCTION

This report is an overview of the issues, problems, successes, and implications of the process of preparing teachers for Vocational Education. In seqential order, the report contains brief discussions of the origin and evolution of teacher preparation, the professional development concept, nature of programs, management of teacher preparation, special problems, and future needs and opportunities. The data base for this report includes the two reports of Project Baseline, unpublished data assembled for consideration by Project Baseline, and supplementary data available for review and analysis.

THE DATA BASE

These introductory remarks would be incomplete and misleading if they did not include observations concerning the inadequacy of the data base. Congressional leaders and others have complained about the inadequacy of the data upon which policy decisions must be made. It was this problem that contributed to the initiation of Project Baseline, and effort to establish base data for decisions about the scope and direction of Vocational Education. It its first two volumes, Learning a Living Across the Nation,[1] Project Baseline has assembled the data reported by States on U.S. Office of Education Form 3136, and it has subjected these data to various types of analysis and elaboration. The Baseline staff has found repeatedly that these data are inadequate, and incomplete, and that drastic changes and improvements should be made in this data base, upon which policy decisions and programs operations rely. This conclusion becomes obvious in any effort to examine and analyze the information as it relates to teacher preparation. It is insufficient merely to observe that the data are inadequate. What is the nature of the inadequacy? First, the data on Vocational Education itself are inadequate. States provide reports to the Federal level to justify the use of Federally appropriated and allocated funds. This practice supports the traditional and highly successful "matching" principle in Vocational Education. But State and local expenditures often have exceeded Federal allocation by multiples of four to seven. Furthermore, States often have program activities or dimensions which go beyond those required to justify an allocation of Federal funds, and it is not required that these be reported through the normative or traditional reporting procedures. Data on such additional activities are not assembled for reporting or available for analytic purposes.

The reported data on programs or plans are limited almost exclusively to those programs managed by State education agencies and funded by Federal appropriations through the U.S. Office of Education. Vocational Education and training programs authorized or stimulated by other branches of the Federal Government are a source of important data for policy and program determination. However, this information is not

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[1] Learning a Living Across the Nation, Project Baseline, First and Second National Reports, Vol 1 & 2, Northern Arizona University, Flagstaff, Ariz., 1972-73.

assembled by State education agencies, and what data are made available are far from adequate for purposes of analysis and comparison.

Another gap in data involves the vocational and occupational training programs in the quasi-public domain, namely, the activities carried on as on-the-job training (OJT) in business and industry. Ordinarily regarded as the private sector, business and industry are treated herein as the quasi-public domain for two reasons: (1) Because business/industry OJT expands with high employment and diminishes with rising unemployment, the fiscal burden is cyclically or spasmodically thrust upon public training institutions or agencies. Accordingly, it is necessary for public agencies to be tooled up to accept an expanded flow of students as unemployment rises. Even more important, (2) OJT is a cost of corporate operations and thus included in corporate tax deductions.* To the extent that OJT influences the tax base available. for all public services, it is in the public domain of occupational training policy. Either or both of these reasons should be included among the arguments for an adequate data base of examining on-the-job training.

The limitations in available reported data are almost as important as the gaps described. The greastest volume of reported data is on enrollment. But the enrollment reveal nothing about the length, intensity, or purpose of a training program. "Enrollment" may indicate the intent to complete an instructional program, the temporary exploration of an occupational area, or the actual completion of one. Nor do current data offer any information about the institutional base in which instruction occurs. That is, the data do not reveal whether instruction takes place in a comprehensive school with a differentiated curricula, a vocational school, a vocational center, or some other type of institution or agency. The nature of accreditation, if any, of such institutions is an obvious void in the data.

Current data on the preparation of teachers are even more fragmentary than the data on Vocational Education and training. A most conspicuous limitation is that the data do not reflect the "developmental" mode, which was implicit in the 1965 Education Professions Development Act. Rather, the reported data reflect the "public utility" mode, which has become the traditional approach to vocational teacher education. That is, teacher education data are reported by level (secondary, post-secondary, adult, special needs, etc.) and by traditional vocational field (agriculture, home economics, distributive education, etc.).

The available data are inadequate to carry out any analysis which might examine the linkages between the processes of teacher education

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*Note: Public financing of vocational training programs may occur in four main ways -- tax levies, tax credits, tax shelters, and tax deductions. This paper does not assume that public policies governing Vocational Education and training are limited by programs generated by tax levies, or that the Internal Revenue Service is not one of the Federal agencies involved in such policy.

and certification or examine the desirability, feasibility, or consequences of accrediting teacher education institutions or agencies. Most importantly, available data do not reveal the capacity or the quality of the teacher/instructor training function in vocational or manpower programs.

The defects in the data reflect the rigidities of compliance reporting in an atmosphere where it is expedient simply to fulfill requirements rather than to provide thorough information.

ORIGIN AND EVOLUTION OF TEACHER PREPARATION

The history of vocational teacher preparation has current relevance to planning and program direction. An excursion into the past, illuminating the paths that have been traveled and the consequences of the journey, should shed light on some choices now confronting vocational educators.

In the accommodation of teacher education into the universities in the latter half of the 19th century, American education set an historical precedent. No other universities in the world were so interested in including teacher education. The training of secondary level teachers in American universities occured much earlier than the training of elementary teachers; the introducation of both levels happened at least fifty years prior to any similar movement in the universities of any other country.

The movement in the United States emerged through public debate which later grew into a congressional debate, culminating in the passage of the Morrill Act of 1862. The two most important outcomes of Morrill legislation were the elevation of a number of trades and occupations to full professional status and the establishment, for the first time, of professional schools within the structure of universities. In every respect, it was vocational legislation of a most inventive character.[2]

Morrill legislation became pointedly vocational in 1907, when the Nelson Amendment authorized the use of Federally appropriated funds for the training of vocational teachers. This hastened the development of a profession of vocational teaching, triggered the flow of State resources toward Vocational Education, and initiated commitment of the universities to Vocational Education. In a number of States, the Nelson Amendment was followed-up by State legislation supporting Vocational Education in the schools. At that time, it appeared that Vocational Education would be linked comfortably and naturally with the teaching and research missions of higher education.

The Smith-Hughes Act of 1917 and subsequent legislation had both positive and negative effects on vocational teacher education. On the positive side, the law recognized the need for the Federal government to continue the commitment to teacher education that had been initiated by Morrill legislation. This commitment amounted to 14.2 percent of Federally appropriated funds, a level that since has diminished to less than seven percent.

The negative effect of the Smith-Hughes Act resulted from the manner in which the teacher education funds were administered. Federal funds administered by State education agencies were made available to

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[2]Gordon I. Swanson, "The World of Work," Education in the States: Nationwide Development Since 1900 (Fuller and Pearson, Eds.), National Education Assn., Washington, D.C., p. 294. 1969.

universities on a salary matching basis, usually fifty-fifty. Vocational teacher educators often complained that "State agencies buy half of my time but own all of it." It was not the matching principle in itself that had negative influence. Rather, it was the expectation of accountability for faculty time. A teacher education department was expected to behave as a "normal training" department attached to a university rather than as a regular university department. Vocational teacher education became a function designated by State agencies and also a grant-in-aid program accompanied by frequent inquiries about whether the teacher education institution was trespassing beyond the bounds of its designated function.

More recently, the pattern of allocating funds to teacher education has undergone a further change. Instead of "salary matching," a move has occurred in the direction of "time purchase". On the assumption that higher education institutions should not expect more resources for vocational teacher training than for the training of other teachers, many State agencies have adopted the premise that they will provide teacher education resources for only those "extra" services, mainly in-service training, not necessarily expected in other areas of teacher training.

Despite more than fifty years of rather generous support for vocational teacher education, it cannot be said that higher education has accepted the field of vocational education as a developing intellectual community, as an area in which instruction is related to disciplined inquiry at advanced graduate levels, or where the problems of a Nation's work force, including productivity and quality of life as well as employability, are embraced as important dimensions. Vocational Education has not grown to possess the earmarks of strength or excellence among university programs -- strong graduate programs at all levels, extensive research, priority of space, instruction considered important to all students (or even to all students in the field of education), or a purpose which is central to the mission of the university. Vocational teacher education has developed within the expectations of a "public utility mentality" identified by short-term planning, categories of effort defined within limited and rigid boundaries, and a measure of effort described by enrollment in required courses and the delivery of credits. Teacher education has been viewed as an ancillary activity at the Federal and State levels. It is not surprising that its growth and status in higher education also have been ancillary.

Two recent developments have given promise to the possibility that higher education could contribute more than marginally to Vocational Education. The first was the Education Professions Development Act of 1965. Omitted entirely from the original legislation, Vocational Education was included in its provisions as a part of the Vocational Amendments of 1968. Administered by the U.S. Office of Education through the Bureau of Education Professions Development (BEPD), this resulted in two refreshing changes in direction: (1) the substitution of a broad professional development concept for a narrow teacher training approach, and (2) the initiation of doctoral level fellowship training programs in Vocational Education. However, after two years in BEPD, the administration of the Vocational Education aspects of professional development was shifted to the Bureau of Adult, Vocational and Technical Education

(BAVTE).[3] Doctoral level fellowship programs were terminated immediately and supplanted by one-year fellowships without identification of an advanced degree goal. This was clearly a return to a previous tradition, that of viewing higher education as providing an ancillary role in support of the immediate needs of Vocational Education rather than a developmental role for longer term needs.

The second recent development occurred through initiatives taken by the U.S. Department of Labor. Recognizing that there was no manpower profession and that there was a growing need for university strength in manpower studies, the Office of Research and Devlopment of the Manpower Administration established an institutional grant program for developing manpower curricula and manpower research. In addition, it established a program that offers post-doctoral study grants and dissertation grants to encourage doctoral candidates in all fields to begin inquiries that might lead to professional careers of sustained interest in the problems of the American work force. About twelve university programs are assisted annually through the institutional grant program. Approximately fifty post-doctoral and dissertation grants are made each year. This approach by the U.S. Department of Labor is the obverse of the one taken by USOE leadership in Vocational Education.

SUMMARY

Vocational teacher education was provided for specifically through Federal legislation in 1907 that expanded upon the Morrill Act establishing Land Grant universities. It appeared at first that this would help establish the profession as a research and teaching program within universities. However, further legislation and the attitudes within higher education and at Federal and State levels, resulted in the view of vocational teacher education as simply an ancillary activity, rather than as a developing intellectual field.

Teacher education has operated on the model of a delivery system rather than a development system. A professional development concept has emerged over the past decade, but it has encountered strong forces of reactionary tradition. Its continuance will depend on the direction of future policy, the main thrust of the next section of this report.

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[3] Vocational Education: Staff Development Priorities for the 70's, National Advisory Council on Education Professions Development, January 1973, p. 31.

THE PROFESSIONAL DEVELOPMENT CONCEPT

The professional development concept originated in law with the passage of the Education Professions Development Act of 1965. Some educators viewed it as a quantitative and qualitative approach to establishing an orderly flow of educational manpower.[4] Others viewed it as a way of linking educational policy with the problems of educational manpower, a policy development approach.

Today, such variation in views has become rhetorical. The excess supply of teachers in some fields has almost terminated any interest in examining the professional development concept as a policy variable for educational planning or development. Federal allocations to professional development have declined and State allocations have not risen to augment them.

In spite of this declining interest, however, this concept has potential for significant impact within educational policy -- including our specific area of interest, vocational policy. The purpose of this discussion is to signal the consequences of not embracing such a concept.

Educational policy in the United States is governed by three types of forces. The first involves a type of "crisis mentality," with a gimmick orientation. A government agency or a politician determines - or simply declares - a "crisis," and finds new labels for what usually are old ideas, e.g., "educational renewal," "right to read," "career education." This type of policy force is attractive, and amenable to goal-setting. It also is seductive and prostituting, conducted for political expendiency without full consideration and deliberate rejection of policty options.

The second type of policy force involves the action and interaction of interest groups. This is illustrated by competing claims among government agencies, professional organizations, advocates of minorities, and various levels of education.

A third policy force involves continuing rigidities in the movement toward becoming even more of a credentialing, licensing, accrediting, and certificating society. This powerful force establishes boundaries for innovative efforts and for demonstrations of alternative policy options.

Altogether, some of the basic issues critical to the future of educational policy are obscured. There is no clear over-all focus on educational policy, or on a human resource policy existing as a superordinate. Such an over-all human resource policy would be useful referent for the development of Vocational Education policy.

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[4] The Education Professions - 1968, U. S. Department of Health, Education and Welfare, Office of Education (OE-58032), Washington, D.C., pp. 12-15.

At the heart of Vocational Education policy should be concern for the quantity and quality of the Nation's human resources perceived in the context of employability, productivity, and work satisfaction. This should be a dual concern, resulting in a policy that promotes the opportunity for individuals to adjust, advance and survive with an optimum quality of life, and the ability of the Nation to use an investment in human resources to aid the Nation to adjust, advance and survive with social and economic quality.

Such a policy would not permit the Nation to be casual about how its labor force becomes employable, productive, and adjusted to the work world. Nor could the Nation be casual about the capacity of the human resources market to operate effectively in utilizing manpower. Crucial to the viability of such a policy would be the existence of agencies and institutions prepared to be inventive, dynamic and effective in their dual responsibilties to the Nation's work force and the Nation's market for human resources. Most important would be individuals bearing professional obligations and responsibility for policy elaboration and implementation. Such individuals could be defined within the narrow constraints of teacher training. Rather, they belong within a broader context of professional development.

Instead of such an explicit outline, however, we find that Vocational Education policy is more implicit; it must be observed by looking at preferred programs rather than at preferred policies. Preferred programs have been shown to be those which are natural extensions of, or adjuncts to, compulsory education. Most have been rapid and recent extensions into the thirteenth and fourteenth grades, now referred to as post-secondary programs. Vocational adult education, which does not seem to fit into the organizational and administrative patterns of compulsory education -- still serves less than five percent of the work force.

Vocational Education programs are concentrated on the young who are preparing for initial employment. Most of the enrollment is under the age of twenty-four years. The programs are centered almost exclusively on individual skill training, with almost no focus on the organization or training of human resources for increased productivity, job creation, entrepreneurial training, or the improvement of the work place. Vocational Education has expanded greatly over the past decade, but most of the expansion has been linear -- more enrollees and a larger catalog of occupations.

A similarly narrow focus is evident in a review of some of the assumptions related to vocational teacher preparation.

Vocational Education tends to deal with highly conventionalized interpretations of the public interest, the organization of instruction, and the measures of success. It reflects patterns of inclusion and exclusion, emphasis and subordination, which supports such conventions. To the extent that such patterns become comfortably repetitive, they begin to take on the validity of acceptable assumptions. Some of these assumptions are:

1. Public responsibility and preference for preparing individuals for trades or professions is directly proportional to the length of the training period. The training programs for vocational teachers in business, for example, distributive occupations, home economics, and agriculture education, ordinarily culminate in a baccaulaureate degree. The subsequent teaching duties of teachers thus trained are likewise in programs of a relatively long time duration. The skilled trades for which training time, including teacher preparation time, is relatively short (truck driving, land surveying, building maintenance, etc.) are less often dependent on public resources and organized in public institutions.

2. The public responsibility is greater to the forms and norms of training for occupations which are more prestigious in the occupational hierarchy. If one were to describe the midpoint of the range of prestige in the occupational hierarchy, it would be seen that vocational preparation at public expense tends to concentrate on those occupations above the mid-point. Occupations at the lower end of the hierarchy which often serve as steppingstones to the higher ones often are not regarded as important for the investment of public training resources.

3. Teacher and instructor training are regarded as more in the public domain if subseqent teaching duties serve programs which are "natural" extentions of, or closely allied with, compulsory education. The concepts of lifelong education or recurrent education are regarded as desirable goals for the future, but generally untended in the present. In principles, upgrading, updating, and retraining are regarded as important for the work force. In practice, there are no cadres of instructors prepared for this type of instruction in the public domain.

4. Teacher and instructor training is more fully in the public domain if it is easily amenable to institutionalization and credentialing. Non-formal educational programs may be high in value, but they are low on the scale of public investment.

These assumptions reveal a selective pattern of preferences. Vocational Education and its teacher preparation contribute to training programs for a limited number of occupations which are relatively prestigious, require relatively long training periods, and are easily institutionalized for a clientele in or close to the ages of compulsory education

Over-all, then, it is clear that, in terms of policy which optimally could seek to serve the entire work force in an era of increasingly rapid technological change, Vocational Education is still a marginal activity. A disciplined approach to the problems and the potential of the work force, a professional response to the policy-related needs of the labor market - these await the realization of a professional development concept in Vocational Education or some parallel or related field.

SUMMARY

The professional development concept has the potential for significant impact on Vocational Education, even though the potential is restricted by the absence of any clear focus on a national educational policy or to any human resource policy existing as a superordinate. An over-all human resource policy would be a useful referent for the development of Vocational Education policy, but, its absence is neither an excuse nor a justification for an incomplete or weak Vocational Education policy. Described as legislation, Vocational Education policy is inclusive and overarching. Described in terms of preferred or operating programs, it is limited in the range of labor force training problems confronted, and it is restricted to a narrow age group. A similarly narrow focus is seen in the assumptions related to preparation of vocational teachers.

VOCATIONAL TEACHER EDUCATION

This section deals with the need for teachers in Vocational Education, as reflected by enrollment; the supply of teachers; the components of vocational teacher education; the performers of that education, and the quality.

THE DEMAND FOR INSTRUCTION

There is no good estimate of the demand for instruction in Vocational Education. The best approximation is given in the official reports of enrollment as shown in Table I.

Table I

ENROLLMENTS IN VOCATIONAL EDUCATION, BY LEVEL AND TARGET GROUP
FISCAL YEARS 1970-1977

	Enrollment			
	1970	1971	1972	1977 (Projected)
Total	8,793,960	10,495,411	11,602,144	17,294,000
Secondary				
Less than 9th grade	400,000	1,383,368	1,608,871	2,291,000
Grades 9-12	4,714,451	5,111,273	5,622,777	8,125,000
Post-Secondary	1,013,426	1,140,943	1,304,092	2,710,000
Adult	2,666,083	2,859,827	3,066,404	4,168,000
Disadvantaged	(805,384)	(1,414,437)	(1,616,621)	(2,322,000)
Handicapped	(115,219)	(208,781)	(221,342)	(380,000)

	Percent Distribution			
Total	100.0	100.0	100.0	100.0
Secondary				
Less than 9th grade	4.5	13.2	13.9	13.2
Grades 9-12	53.7	48.7	48.5	47.0
Post-Secondary	11.5	10.9	11.2	15.7
Adult	30.3	27.2	26.4	24.1
Disadvantaged	(9.2)	(13.5)	(13.9)	(13.4)
Handicapped	(1.3)	(2.0)	(1.9)	(2.2)

Source: Trends in Vocational Education, 1972 (Voc. Ed. Info. No. II). U.S. Office of Education.

As discussed earlier, there is no way of ascertaining the duration, intensity, or purpose of this enrollment. Moreover, it is possible that enrollment data reflect policy decisions to emphasize or de-emphasize certain categories more than they reflect student demand. Table I shows, for example, that Vocational Education's greatest expansion is occuring in junior high school, below ninth grade. Is this a reflection of actual demand? Is it a reflection of the recent emphasis on career education. Or, is it a reflection of some change in the system of counting enrollment, or in establishing programs of instruction? (In any case, it is a curious anomaly that the average age of individuals enrolled in Vocational Education is going down while the average age of the work force is going up.) While Vocational Education enrollment may reflect only the nature and distribution of the available offerings, it does serve as the base for a rough estimate of the trends in the demand of teachers. In order to get an estimate of the specific categories of teachers needed, it is necessary to examine the enrollment as differentiated into U.S. Office of Education instructional programs. A summary of this information is given in Table II.

Table II

ENROLLMENT AND NUMBERS OF PROGRAMS CLASSIFIED BY OE INSTRUCTIONAL PROGRAMS

(000)

Enrollment	0-10	10-50	50-100	100-300	300-500	500+
Number of Programs	43	43	25	11	2	4

Source: Trends in Vocational Education, 1972, (Voc. Ed. Info. No. II), U.S. Office of Education.

It is clear from Table II that most of the enrollment in Vocational Education is concentrated in a small number of instructional programs. About sixty percent of the enrollment is in instructional programs enrolling more than 200,000 students and representing only nine areas of instruction -- accounting, clerical, secretarial training, typing, homemaking, agriculture, merchandising, auto mechanics, and metalworking. At the same time, there are sixty-six instructional programs with national enrollments of less than 20,000 students.

It should be stressed that enrollment data indicate only a rough estimate of the demand for teachers on a long-term basis. For short-term estimating it is necessary to conduct surveys such as those undertaken by the United States Comptroller General in 1974.[5] The surveys indicated that vocational teacher demand was high in agriculture, industrial arts, and trade and industrial, while low in business education and distributive education.

THE SUPPLY OF TEACHERS

Data on the supply of vocational teachers are as sketchy as data on demand. In the General Accounting Office Report,[6] the Department of Health, Education and Welfare acknowledges the unreliability of present data. In the GAO survey, the suprising paradox was that teacher shortages continued in the two fields where there has been the longest record of Federally assisted programs -- agriculture and the mechanic arts (trade and industrial education).

The reported data on teacher supply in Vocational Education are shown in Tables III and IV.

[5] "Supply and Demand Conditions for Teachers and Implications for Federal Programs," Report to Congress, Comptroller General of the United States, General Accounting Office, 1974.

[6] Ibid., p.37

Table III

TEACHERS OF VOCATIONAL EDUCATION, BY LEVEL
FISCAL YEARS 1970-1977

	1970	1971	1972	1977 (Projected)
Number				
Total	190,364	211,550	235,658	350,000
Secondary	101,043	118,919	131,404	193,000
Post-secondary	41,416	48,874	56,311	85,000
Adult	62,399	63,583	67,242	100,000
Percentage Distribution				
Total	100.0	100.0	100.0	100.0
Secondary	49.3	51.4	51.5	51.0
Post-secondary	20.2	21.1	22.1	22.5
Adult	30.5	27.5	26.4	26.5

Source: Trends in Vocational Education, 1972 (Voc. Ed. Info. No. II, U.S. Office of Education.

Table IV

TEACHERS OF VOCATIONAL EDUCATION, BY PROGRAM
FISCAL YEARS 1965-1972

	Numbers				
	1965	1969	1970	1971	1972
Total (unduplicated)	109,136	166,898	190,364	211,550	235,658
Agriculture	17,608	12,565	12,420	12,910	13,270
Distribution	7,200	9,741	10,458	11,974	12,795
Health	3,429	8,876	10,483	12,613	14,552
Home Economics	31,243	31,845	34,225	38,105	41,547
Office	15,850	37,923	45,081	49,363	52,662
Technical	9,213	13,488	14,241	14,750	16,820
Trades and Industry	39,804	50,592	56,720	59,065	65,105
Other	488	2,087	6,736	6,540*	6,369*

	Percentage Distribution				
	1965	1969	1970	1971	1972
Total	100.0	100.0	100.0	100.0	100.0
Agriculture	15.1	7.5	6.5	6.3	5.9
Distribution	5.9	5.8	5.5	5.8	6.2
Health	2.8	5.3	5.5	6.1	6.5
Home Economics	23.9	19.1	18.0	18.6	18.5
Office	12.7	22.7	23.7	24.0	23.5
Technical	6.9	8.1	7.5	7.2	7.5
Trades and Industry	30.8	30.3	29.8	28.8	29.1
Other	1.9	1.2	3.5	3.2	2.8

Source: Trends in Vocational Education, 1972 (Voc. Ed. Info. No. II), U.S. Office of Education

*Includes only teachers in occupational programs. Unduplicated total includes also 30,418 teachers in 1971 and 37,562 teachers in 1972 teaching in special programs.

Supply of teachers in a field is determined by the stock and flow of teachers in the field. It is never sufficient to know the total number of teachers as shown in Tables III and IV. Teacher preparation institutions always must respond to the stock and flow of teachers. The pre-service training demands are always higher when the flow is high and the in-service training demands are always higher when the stock of teachers is high. Rough estimates of the total stock of teachers for this decade of the 1970s are shown in Table V.

Table V

ESTIMATES OF STOCK OF VOCATIONAL TEACHERS IN 1980

Year	No. of Teachers
1971	211,500
1972	235,685
1973	268,178
1974	305,178
1975	347,302
1976	395,231
1977	449,773
1978	511,841
1979	582,475
1980	662,857

Source: Unpublished data received by Project Baseline from the various States.

PROGRAM COMPONENTS

Attempting to describe the components of vocational teacher education, is merely an effort to use some sort of scaffolding for thinking about the process, to identify some natural or traditional boundaries used to differentiate the parts of the system, to describe the steps and stages which lead to a desired level of performance, or to define the elements of the over-all program for which there may be some measure of accountability. Program components, therefore, are interpreted differently by different observers. Ordinarily, the described components are arrangements of convenience, usually to satisfy some type of administrative or proprietary comfort.

Teacher education institutions ordinarily describe vocational teacher education as consisting of three components: general education, professional education, and a third described variously as subject matter, job competence, or occupational skill. General education represents a level of educational attainment, usually the completion of two years of college-level instruction. Professional education represents a level of understanding and skill in dealing with the problems of and providing occupational instruction to a clientele group (the work force, secondary level students choosing a vocation, mechanics learning a special skill, etc.) The third component, occupational practice, is the most crucial; it is the most difficult to organize and the least well implemented. Its complexities will be discussed later.

Teacher education institutions attempt to achieve a balance among the three components, but this usually is maintained only in undergraduate initial-certification programs. In graduate study, any one of the three components may receive the bulk of the emphasis. Ordinarily, either general education or professional education is emphasized. Rarely is there a concentration on occupational skills for a graduate degree in Vocational Education.

For State and Federal reporting purposes, the components of vocational teacher education are described by the level of instruction (secondary, post-secondary, or adult) and by broad categories of subjects taught (agriculture, distributive education, business education, etc.). Also included are categories or components for the disadvantaged and handicapped. These were created initially for administrative convenience in compliance reporting, and now exist as a convenience for program operations as well.

A third arrangement of components involves the division of vocational teacher education into pre-service preparation and in-service preparation. These should always be perceived in terms of the incentive and reward system which surrounds them. Pre-service education leads to employment in teaching jobs, which may be satisfying and financially rewarding. When pre-service education also culminates in a baccalaureate degree, it enhances professional mobility and opportunity. The degree widens the choices and increases the options. In-service education may be related even more closely to its reward system. The rewards include job retention (recertification), increased remuneration (when based on salary-related credentialing or differential salaries for higher postitions), and the job mobility or satisfaction associated with an advanced degree.

PERFORMERS OF VOCATIONAL TEACHER EDUCATION

It is almost impossible to assemble a data base for making any kind of observation or conclusion about the performers in vocational teacher education. This information is not included in required Federal reports, nor is it included in State Plans for Vocational Education.

It is relatively easy to describe and to chronicle the administrative performers in vocational teacher education. The difficulty is in getting a grasp of operational performance.

The nature of the work of staff at the Federal level has been described in detail by the National Advisory Council on Education Professions Development.[7] It is clear from the description that vocational teacher education has a Federal level history of low priority, aimlessness, and ancillary character. This is illustrated further by this example: With funds provided by the U.S. Department of Labor, the U.S. Office of Education has established eight Area Manpower Institutes for the Development of Staff (AMIDS). The organization of this effort -- the performers and the performance -- is not a part of the Manpower Report of the President prepared by the U.S. Department of Labor, (with a section of the 1974 Report by the Secretary of Health, Education and Welfare), nor is it a part of the professional development data reported by the U.S. Office of Education.

Through the aegis of Education Professions Development, regional offices of the U.S. Office of Education have been responsible for activities of Section 553 (Part F) since July 1, 1973. This has been solely administrative in nature.

State agency concern for professional development has grown rapidly since 1971. Carrying the title of EPD Coordinators, performers have carried out activities which are both administrative and operational. Administratively, they have managed the professional development allocations provided by the Federal government through Section 553 (Part F) along with any State allocations to similar purposes. In addition, they have planned, organized, stimulated, and coordinated a variety of in-service training activities for vocational and career education teachers.

Performers at the operational or instructional level of teacher education include universities, colleges, technical schools, local education agencies, employers who furnish job training sites, and individuals who provide contract services. In most States, this is a confusing array. Some States have organized teacher education councils to coordinate, or to adjudicate, the competing claims of the entities wishing to engage in some aspect of teacher training activities.

PROGRAM QUALITY

Measures of quality in vocational teacher education are almost entirely proxy measures. Combinations of these measures are employed to form judgments about teacher education. These judgments are constrained

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[7] op. cit., National Advisory Council, pp. 34-36.

within a framework of regulations, inertia, interpretations of legislative intent, folklore, and tradition associated with views related to the proper contribution which Vocational Education can make to the itinerary of individuals as they enter, make progress in, and exit from careers in the work force. This frame work is often termed policy.

Certification of teachers is the most common of the proxy measures of quality. It is highly flexible -- certification standars are raised during periods of teacher surplus and lowered during periods of teacher shortage. Certification requirements are more specific for teachers at the secondary level than at the post-secondary and adult levels. They also are more specific when much of the teacher preparation involves college-credit courses rather than job-training experience. Instrucation provided in on-the-job training or under the provisions of the Comprehensive Training and Employment Act does not require any kind of certification. Nor, in most States, do individuals involved in training teachers need any kind of certification.

Certification is a regulatory function intended to insure that public funds will not be used to employ teachers who are unprepared or poorly prepared. Quite possibly, it could be linked with teacher education to become a more effective proxy measure of quality for all types of work training.

Accreditation is another of the proxy measures of quality, also uneven. No recognized accrediting body has developed standards or criteria for accrediting vocational teacher education. Accordingly, no institution can be challenged for its low quality or applauded for its high quality as a consequence of an accreditation process.

If certification and accreditation are blunt instruments for measuring quality, what then can one examine to get some truer perception? Again, it is necessary to say that the data are meager, and their absence may be disabling. But there are some data, as shown in Table VI, which prompt some interesting, and perhaps instructive, questions.

Table VI shows that a rapid rise in in-service teacher education enrollment began in 1970. What is the meaning of "enrollment" in this connection? Does it represent substitution of a larger number of short-term (meeting, conferences, short-term institutes, etc.) for longer term (summer sessions, sabbatical leave, etc.) training periods? Does it represent a shift in the pattern of availability of pre-service opportunities?

What is the incentive, reward, or regulatory system that influenced the growth of in-service vocational teacher education after 1970? Did it result in the awarding of a greater number of advanced degrees? What is the nature of the need response reflected in the growth?

Does the growth in in-service enrollments after 1970 reflect "added values" to the field of Vocational Education? If so, are these being incorporated into pre-service training so that teachers in initial-certification programs also will receive them?

It is entirely possible that vocational teacher education began to provide some new and valuable qualitative dimension in 1970. It is

also possible that the expanded enrollment represents an expansion of ad hoc arrangements of an episodic type, detracting from the ability and commitments of teacher education institutions to provide qualitative pre-service training. Depending upon who the performers are in the expaned in-service enrollment, pre-service education actually may become of lowered quality.

These and other questions need to be raised and analyzed. While expanding enrollments in in-service teacher education always have been regarded as desirable, it is also necessary to known whether they are associated with qualitative gains which can be expected to be genuine, durable, and sustaining.

Table VI

DISTRIBUTION OF PRE-SERVICE AND IN-SERVICE ENROLLMENTS, 1965-77

	1965	1966	1967	1968
No. Pre-service	33,771	38,858	47,278	49,579
No. In-service	35,280	38,225	42,920	48,203
Percent Pre-service	49.0	50.4	52.4	50.7
Percent In-service	51.0	59.6	47.6	49.3

	1969	1970	1971	1972	1977 (Projected)
No. Pre-service	58,324	52,783	52,753	60,759	80,500
No. In-service	52,350	60,680	80,746	80,569	120,000
Percent Pre-service	52.7	46.5	39.5	43.0	40.0
Percent In-service	47.3	53.5	60.5	57.0	60.0

Source: Trends in Vocational Education, 1972 (Voc. Ed. Info. No. II), U.S. Office of Education.

SUMMARY

There appears to be no reliable estimating of the demand for vocational instruction. Enrollments do, however, reflect a demand for teachers. The stock and flow of teacher supply also reflect the demand for teachers.

The ingredients of teacher education programs include various combinations of general education, professional education, and skill in the occupation to be taught.

In-service programs of vocational teacher education have grown rapidly. There is no measure of whether these are remedial programs or professional development programs prompted by program redirection and change. It is difficult also to gauge whether the growth of in-service programs has had any benefits for pre-service programs or advanced graduate programs. Nor is there any measure of the extent to which the system of incentives and rewards for in-service education is linked to the qualitative improvement of Vocational Education.

Vocational teacher education program quality is a matter that is largely internal to the suppliers of teacher education. Certification requirements are flexible, and accreditation norms for vocational teacher education are essentially nonexistent.

MANAGEMENT OF TEACHER PREPARATION

The management of vocational teacher preparation is largely the responsibility of State education agencies. The management functions include planning, allocating, reviewing, evaluating, and monitoring. Much of the management also occurs within teacher education institutions and in local education agencies.

State education agencies are limited to specified vocational programs authorized under Federal and State legislation. Not included are programs operated in States by prime sponsors authorized by the Comprehensive Employment and Training Act, or most other programs coordinated by State Manpower Planning Committees.

In 1972, four years after the enactment of the Vocational Amendments of 1968, States began preparing supplements to State plans covering professional development. Many plans consisted of minimum descriptions of the intended use of funds allocated under Section 553 (Part F) of the 1967 Education Professions Development Act. Other States developed elaborate plans, including long-term master plans for teacher education and professional development. Many of the States assumed leadership for developing new programs or significant variations in existing programs of teacher education.

All States now have begun to implement responsibilities for the management of teacher education. Much of the emphasis has been on in-service education, with special attention to project oriented activities associated with such efforts as career education, competency-based instruction, and curriculum development. It is important to note that the expansion of the role of State agencies is just beginning. Its continued growth may lead to a fully functioning concept of professional development, which may increasingly serve all State and local programs engaged in training in the present and future work force.

SPECIAL PROBLEMS

The special problems indentified in this section represent a minimum list which deserves thoughtful scrutiny by leaders in Vocational Education. These problems cannot be solved by exhortation; they require analysis and a concern for the Nation's efforts to deal with the problems of employment, productivity, and the quality of life for its work force.

The need for creation of a data base and for analytical treatment of the capacity of the Nation to train its work force. At present, as indicated repeatedly throughout this report, the data base is far from sufficient concerning the total training needs of the work force. The appropriation of public funds for training and the creation of physical facilities do not insure that the available training is credible, or that the nature and quality of instruction even begin to meet the need.

The scale of effort. Claims are made that vocational teachers are prepared to provide instruction leading to the full range, or at least a significant number, of the occupations found in the American work force. Yet, vocational teacher preparation still is limited to a mere handful of these occupations. In 1974, there is no program of vocational teacher preparation in any institution or in any State that embraces all the career clusters represented in the work force. The career cluster approach may be a move toward excessive generality in preparing instructors. But, combined with efforts to achieve specificity in training for specialized industrial jobs or processes, it may be the most effective approach to instructor training.

The competency question. Most of the attention has been given to pedagogical competence. In fact, the problem is one of competency in industrial processes, productivity, and occupational skills, particularly in trade and industry. A segment of vocational teacher preparation called "work experience" or "job training" is not likely to suffice. It may be necessary to create entirely new norms or forms of teacher preparation, including the creation of entirely new types of institutions, to insure that vocational teacher preparation will not operate at the margins of technical competency.

Adherence to the traditional concept of occupational titles. The need to train individuals to an employable level of job skills within an occupational title has become an article of faith and a part of the ritual of Vocational Education. It is based on the premise that the future manpower needs of the country are determined by employers' projected demands for individuals possessing skill qualifications within specific occupational titles. But employers are interesed in productive industrial processes, not in occupational titles. They are interested in the adaptation of occupational skill to productivity in the over-all enterprise. The concept of occupational titles is a taxonomic look at the past, not an imaginative look at the future. To the extent that it remains the former, it will be a constraint to effective vocational teacher preparation.

Accreditation of teacher preparation. Proliferation in vocational teacher preparation in recent years, including its dispersion into many

institutions and agencies within States, has intensified the problem of finding some way of holding such institutions and agencies to standards of performance. The problem is not whether an individual course or program should be counted as "credit" toward certification or a degree. The problem is whether the institution or agency has a commitment to vocational teacher preparation beyond an arrangement of adaptation or convenience.

FUTURE NEEDS AND OPPORTUNITIES

In large part, the future needs and opportunities described herein constitute a summary of the arguments made earlier in this report. None are easy to deal with, but all are actionable by responsible leaders at the national, State, and institutional levels.

There are both needs and opportunities for Vocational Education and professional development to move beyond the functions of preparing young students for occupational decision-making and preparation for entry-level employment. Remaining at these functional levels will only sustain Vocational Education as a marginal contributor to the solution of problems of the work force. Vocational Education could, instead, move to include the problems of worker productivity and the problems of the quality of life in a career.

The acceptance of such a policy direction for Vocational Education would represent a commitment to the entire work force. It also would represent acceptance of responsibility for spokesmanship vis-a-vis the rights of workers, mainly, the rights to training, retraining, and up-dating. Such rights eventually should become important statutory rights in any constitutional democracy.

Such a policy direction necessarily would embrace the concept of professional development and introduce a developmental mode to replace the public utility mode now extant in teacher preparation. It would require an interdependency between Vocational Education and higher education in developmental strategies, rather than a relationship of marginal dependency.

The apparent downward trend in the average age of Vocational Education enrollees is not an adequate reflection of national needs and opportunities in Vocational Education or in teacher preparation. Program scope in vocational teacher preparation should be expanded to include the entire age range of the work force; the importance of doing that is much greater than of expanding programs into the middle school. The desirability of expanding teacher education across all the career clusters and with greater depth in each is obvious.

Finally, the need for achieving credibility in vocational teacher education is crucial. Prerequisite to this is an analytical approach, including the systematic generation and analysis of data on job skills, worker productivity, industrial processes, and related dimensions of vocational instructor training. Another prerequisite is attention to the question of institutional accreditation in vocational teacher training. As vocational teacher education grows more credible, it will link up increasingly with State agencies involved in manpower training and development. This is both a need and an opportunity.

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