

UNIVERSITY RESEARCH MONOGRAPHS  
Number 6.

VOCATIONAL EDUCATION OF  
JUNIOR COLLEGE GRADE

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# Vocational Education of Junior College Grade

BY

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## PREFACE

This book is based upon a study recently made of the problem of vocational education of junior college grade. The study was prompted by leaders of the vocational education movement who believed that there existed a field that had been overlooked in the past, a plane of occupations lying between the professions and the artisans' trades. In prosecuting the investigation, examination was made of the following three phases of the problem:

(a) The need for vocational education of junior college grade, especially under public auspices.

(b) The present status of such education as it is attempted by factory schools, by systems of so-called "training on the job," and by schools conducted for profit.

(c) A survey of present publicly supported educational agencies which might possibly be drafted for the task of carrying on vocational education of junior college grade if a nation-wide system should be organized.

Sections (a) and (b) have been embodied in Part One of the present work and section (c) in Part Two.

After completing the study as above outlined, the manuscript embodying the results was shown to several officers and leaders of associations representing the occupations that the writer had found to be of junior college grade. They generally agreed with the author's conclusions, and urged him to prepare the study for publication in book form, contending that it would be of service to associations in their efforts to secure recognition of their claims that the public should organize technical institutes of junior college grade. The writer has yielded to these requests with the reservation that his original findings of fact and conclusions should remain exactly as they had been determined by him in his study.

It seems as if we are only in the very earliest stage of the history of vocational education. The full content of a curriculum preparing for economic responsibilities has as yet been ascertained for scarcely a single vocation. Nor has there been fully deter-

mined the needs in the economic world for each occupation; nor the trends<sup>in</sup> of growth and change. Research into one small area of this vast field has yielded the results described in these pages.

The writer wishes to acknowledge his indebtedness to a host of competent authorities for direct and indirect help in preparing this volume for the press. Professor Frank W. Hart of the University of California followed step by step the researches upon which it is based, giving helpful counsel at every turn. Doctor W. W. Kemp, Dean of the School of Education, and Doctor Edwin R. Lee, Professor of Vocational Education, in the same institution read the entire manuscript and gave of their valuable experience. Fully a hundred practitioners—librarians, nurses, detectives, radiologists, optometrists, orchardists, accountants, etc., etc.—assisted in one way or another. To all, his lasting appreciation.

G. V. B.

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*September 1, 1928.*

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**PART ONE**  
**THE FIELD OF VOCATIONAL EDUCATION**  
**OF JUNIOR COLLEGE GRADE**



# VOCATIONAL EDUCATION OF JUNIOR COLLEGE GRADE

## CHAPTER 1

### INTRODUCTION

**1. The Problem of Providing Vocational Education of Junior College Grade.**—In the United States vocational education of junior college grade, unlike that of other grades, is still carried on almost exclusively under private auspices or by schools conducted for profit. While each state maintains a university or four-year college offering education of professional grade,<sup>1</sup> and the federal government combines with the states in giving aid to local districts to support numerous occupational curriculums in secondary schools,<sup>2</sup> public funds have not yet been provided for vocational education on the middle level. It is the purpose of this book to reveal the need for vocational education lying between the university level and the secondary school level and to discuss means whereby such education may be administered<sup>3</sup> through agencies supported and controlled by the public.

Educational committees and thinkers of high standing have gone on record in favor of an organization of two grades of vocational education above the high school: a lower or shorter curriculum of three years, to constitute the main program of a "technical institute;" and a higher one, also of three years (but requiring for admission three years of college work), to be

<sup>1</sup> The famous Morrill Act of Congress makes it clear that aid is being given to create in each state a *college or colleges* "where the leading object shall be . . . to teach . . . agriculture and the mechanic arts . . . in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life."

<sup>2</sup> The Smith-Hughes Act of Congress, 1917, states specifically that the funds given by the government shall be used for vocational education of "less than college grade."

<sup>3</sup> Educational administration has at least three quite distinct aspects: (1) class-room administration; (2) school (that is, schoolhouse or building) administration, largely from the standpoint of the principal; and (3) national, state and district administration, frequently spoken of as public administration. It is the third phase of administration that is discussed in these chapters.

given in universities or professional institutions.<sup>1</sup> In practice, also, there is considerable evidence to indicate that some such arrangement for providing two levels of collegiate training is logical and necessary. For example, state normal schools have quite generally organized as two-year or three-year institutions, requiring high school graduation for admission.<sup>2</sup> Nurse-training institutions and schools of applied arts have curriculums of similar length, and may probably qualify as of technical institute grade.<sup>3</sup> On the other hand, schools of medicine and of jurisprudence commonly require for graduation six years of study after completion of high school, while the full engineering degree is seldom given under five or six years beyond high school.<sup>4</sup> Curriculums for medicine, jurisprudence, and engineering may be regarded as representative of education of professional or university grade.

By accident or by design each grade of school—university, technical institute, high school, part-time school—has assumed the task of training young people for a specific group of occupations. While there has been some conflict between two adjacent grades of schools over a few occupations, on the whole a large number of callings have quite definitely found what seems to be an appropriate school level. Thus:

(a) Universities have assumed the training of surgeons, physicians, lawyers, architects, engineers, etc.

(b) Institutions with two- or three-year collegiate curriculums have functioned in the preparation of persons for elementary-school teaching, librarianship, optometry, accounting, etc.

(c) High-schools and institutions of similar grade have been active in training electricians, auto-repairmen, typists, small-scale farmers, etc.

<sup>1</sup> The "Pettie" Committee of the National Education Association recommended in 1902 that secondary education should include Lower High School—ages 12 to 15; Upper High School—ages 15 to 18; and that tertiary education should include technical or collegiate school—ages 18 to 21; and professional school—ages 21 to 24. Compare Hanus, A., "A Modern School," pp. 105-9, who elaborates the plan.

<sup>2</sup> In 1921-2 the ten normal schools of New York State lengthened their curriculums from two-years to three-years, but the seven locally-supported training schools of that state still maintain two-year curriculums only. Cooper, Homer E., "Cost of Training Teachers," p. 9.

<sup>3</sup> Cf. Temple University, Philadelphia, three-year curriculum for nurses; and Otis Art Institute, Los Angeles, three-year curriculum in jewelry work.

<sup>4</sup> The University of California requires seven years of work for the degree of Medical Doctor, and six for that of Juris Doctor. California Institute of Technology, Pasadena, grants the engineering degree at the end of five years of collegiate study. It is customary for engineering schools to grant a bachelor's degree at the end of a four-year curriculum, but not the degree of civil engineer, mechanical engineer, etc.

(d) Vocational education on a level below that of standard high-school work is given by part-time arrangements between school and shop (or store) for factory operatives, machine hands, sales girls, etc.

Later on it will be shown that most occupations, with the exception of elementary-school and kindergarten teaching, which lend themselves readily to the two- or three-year collegiate curriculum, have been taught, almost universally in this country, in schools privately owned and controlled. Since the other grades of vocational education have been carried on at public expense, it would seem that, unless there be unsurmountable difficulties, this grade should likewise be provided at public expense and under public control. Such difficulties as exist—whatever they are—will be examined to ascertain how serious they are and measures will be proposed to overcome those difficulties in order to make public administration successful. Such a task would be profitable, however, only under the condition that there are a large group of occupations and a very large number of workers affected.

It will be necessary, first, to inquire what occupations belong with certainty in this middle class, and how important each is economically; then to examine existing public agencies as to the feasibility of their caring for education of technical-institute or junior college grade; and, in conclusion, to work out from the findings a nation-wide plan of such vocational training. The term "junior college" is preferred to that of "technical-institute" because it more clearly indicates a position in the educational hierarchy: the school is collegiate in rank (i.e., above secondary school), but is junior to the university.

**2. Historical Considerations.**<sup>1</sup>—A brief reference to catalogs of publicly-supported schools will show that there is a group of occupations which have been neglected by the public, and that this group is one for which education should be of junior college grade.

(A) Universities and colleges<sup>2</sup> supported by the states have provided generously for the following occupations:

(a) The major professions, which include approximately twenty-four vocations:

<sup>1</sup> Cubberley, E. P., "Public Education in the United States" contains valuable historical material bearing on the development of vocational education of all grades.

<sup>2</sup> Catalogs of the Universities of California, Washington, Michigan, Illinois, Kansas, Iowa, and Wisconsin were examined. Also Harvard and Columbia, both of which receive some state support.

Medicine	Architecture	Hospital management
Law	Fine arts	Social service
High school teaching	Chemistry	Diplomatic service
Civil engineering	Dentistry	Consular service
Mechanical engineering	Dietetics	Criminology
Mining engineering	Dramatics	Psychology
Electrical engineering	Surgery	Astronomy
Pharmacy	Journalism	Statistics

(b) Agricultural occupations on the professional level,<sup>1</sup> such as:

Creamery management	Rural newspaper editing
Veterinary surgery	Farm experting for railway companies
Teaching of agriculture	State farm-produce inspection
Experiment station work	Management of farmers associations
County farm-advising	Experting in seed houses
Irrigation engineering	Expert work in agriculture implement houses
Government agriculture bureau work	Expert work in flour and sugar mills
Forestry	

(c) Commercial occupations on the professional level,<sup>2</sup> such as:

Bank management	Factory management
Brokerage	Employment management
Advertising	Insurance salesmanship
Wholesale salesmanship	Real estate brokerage
Sales management	Department store management
Executive secretaryship	Profession of economist
Traffic management	Profession of statistician

(B) High schools and trade schools of similar grade are provided for by local districts, and aided by nation and state funds under the Smith-Hughes Act. These schools train youth for the lowest grade of technical occupations:

<sup>1</sup> Kandel, I. L., "Federal Aid for Vocational Education." The literature bearing on agricultural education is replete with criticisms of the agricultural college for failing to train its graduates for operative farming. Kandel quotes congressmen as hurling this charge against the state colleges. Leonard in his study of the "Coordination of State Institutions for Higher Education," quotes similar charges from journalists and others. While the data are not clear, the report of the United States Commissioner of Education, 1922, seems to indicate that of the 2,185 graduates in agriculture of that year, approximately 140 aimed at veterinary medicine, 50 at agricultural engineering, 25 at sugar technology, 5 at flour-mill engineering, 25 at irrigation engineering; while at least 150 new recruits are needed for the force of agricultural teachers under the Smith-Hughes Act, each year. Similarly, it may be estimated that the 5,000 counties of the nation would require some 200 new county farm-advisers annually, etc. The occupations listed in the text absorb most of the remaining 1,500 graduates.

<sup>2</sup> Hill, David, "Introduction to Vocational Education," pp. 331-2, also Chap. X.

(a) Clerical occupations,<sup>1</sup> such as bookkeepers, typists, stenographers, office clerks, retail salesmen. The number of students taking some commercial course in public high schools in 1916 had reached 243,185. In the same year there were not quite 200,000 students enrolled in "business colleges." The latter number is remaining stationary, while the former number is increasing at the rate of 10 per cent per annum.<sup>2</sup> It seems as if the publicly supported high school is destined to take over the great burden of training clerical workers on the high school level.

(b) Small-scale farming.—Under the Smith-Hughes Act the national and state governments combine with local school districts to give vocational training for the operation of small farms. As it has worked out in practice the type of training given is very largely confined to practical, manipulative, and such simple technical work as fits the youth to enter upon profitable farming at an early age. The son of the large-scale farmer does not seem to feel that this is the kind of education that prepares him for the management of his father's estate.

(c) Industrial-mechanical trades.<sup>3</sup>—With the aid of national and state funds, high schools are offering suitable training for such occupations as the following:

Furniture making	Plumbing	Practical electricity
Cabinet making	Sheet-metal work	Stone cutting
Painting	Steam engineering	Terra cotta work
Pattern making	Steam-fitting	Concrete construction
Carpentry	Machinist's trade	Dressmaking
Wood millwork	Blacksmithing	Millinery

(C) Part-time schools are being maintained by local districts with considerable support from state and federal funds. These schools, by co-operative arrangement with factories, stores, and shops, are taking care of the education of factory operatives, counter sales girls, telephone operators, messengers, and similar workers who require only a few weeks of vocational or job training.

<sup>1</sup> U. S. Bureau of Education Bulletin, 1919, No. 55. Report of the Commission on Business Education, National Education Association, gives a short but very interesting history of this movement.

<sup>2</sup> Report of U. S. Commissioner of Education, 1917.

<sup>3</sup> Cf. Trade and Industrial Education, Bulletin 17, 1918, Federal Board for Vocational Education, Washington, D. C.; "Short-unit Courses for Wage-earners," U. S. Bureau of Labor Statistics, Bull. 159, 1915; and U. S. Bureau of Education Bul. 21, 1916, "Vocational Secondary Education."



(D) It is quite obvious that there is a wide gap between the occupations for which public university education is given and those for which public high school vocational training is given, that is, between class A and class B. In this gap lie scores of occupations, such as nurse,<sup>1</sup> librarian,<sup>2</sup> optometrist, watchmaker, and railway station agent. A person desirous of preparing himself for one of these callings must learn his trade by the antiquated method of apprenticeship, or choose to pay either the high tuition of a good private school or the reasonably low tuition of a poor private school. Publicly supported educational institutions have not as yet seriously entered the field of vocational training for this middle group of occupations.

**3. Definition of Terms.**—The terminology used in this discussion has in most cases become standardized. It will avoid confusion and obviate misunderstanding, however, if the meaning of certain terms be stated at this point.

*Vocational education* is any form of education, whether given in a school or elsewhere, the purpose of which is to fit an individual to pursue effectively a recognized profitable employment, whether pursued for wages or otherwise.<sup>3</sup>

*Junior college* is a term now widely accepted as applying to those institutions, either public or private, which offer the first two years of the standard college course, above and beyond the standard fifteen units of high-school work.<sup>4</sup>

*Vocational education* of junior college grade, therefore, begins at the end of a standard high-school curriculum and is completed in approximately two years under the jurisdiction of an institution of collegiate rank. If the vocational training embraces practice work, as in the case of nurses or of elementary school teachers, then the entire time for completing the training may be three years.<sup>5</sup>

*A standard high-school curriculum* as used above may embrace studies inherently vocational, as bookkeeping and typing; subjects that are propaedeutic (i.e., preparatory for higher work, which can scarcely be under-

<sup>1</sup> The training of nurses in many hospitals is actually by apprenticeship methods. The service rendered by the pupil-nurse amounts also to a very high tuition. Even if her services were merely menial, they should be worth forty dollars per month in addition to board, room, and allowance. She is therefore giving approximately five hundred dollars per year to the hospital that trains her.

<sup>2</sup> Library training schools are often conducted by the public corporation that supports the library. Nevertheless, the tuition is usually high enough to pay the entire expense of operating the school.

<sup>3</sup> Quoted from Report of Committee on Vocational Education, National Education Association, U. S. Bureau of Education Bul. 21, p. 33.

<sup>4</sup> Quoted from U. S. Bureau Education Bulletin, 1919, No. 35, "The Junior College," McDowell, F. M., p. 6.

<sup>5</sup> The length of the curriculums for training elementary teachers is now three years in many teachers colleges.