

T H E S I S

THE STATUS OF MANUAL TRAINING IN THE
RURAL HIGH SCHOOLS OF CALIFORNIA

Submitted to the

O R E G O N A G R I C U L T U R A L C O L L E G E

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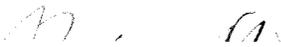
For the Degree of

MASTER OF SCIENCE

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THE STATUS OF MANUAL TRAINING IN THE
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DEFINITION OF TERMS

Manual Training. As the term is used in this thesis, manual training denotes the training of the hand in conjunction with the mind, and does not have special reference to vocational or trade education, although the latter will be included in the survey.

Colonel Francis W. Parker states very clearly what is meant. He says, "The kindergarten led the way to other substantial reforms in education, and called attention to the actual needs of the child. It proved conclusively that hand-work is one of the dominant interests of the child, and demonstrated the actual dependence of brain growth on manual training.

"Manual training is thus a direct outcome and sequence of the kindergarten. It supplies a need for which there is no substitute. The belief that that which is begun in the kindergarten should be continued and expanded in all upper grades forces itself more and more upon thoughtful minds.

"Modern psychology brings its potent evidence as to the tremendous value of the work of the hand in the building of the brain. The trend of educational thought will always be in the direction of hand training as a

fundamental element in education. Manual training gives a true dignity to labor; it calls attention to the place of hand-work in human progress, and as civilization goes on it will have a higher, and still higher place in the hearts of the people." 1

Rural High Schools. The office of Superintendent of Public Instruction of the State of California has not on file at the present time a classification of the high schools of the state into rural and urban. Such a classification must thus necessarily be left to the individual.

Dr. J. M. Gillette in his Rural Sociology gives a suggestive aid for guidance in one's choice.

"The United States Census divides the national population into urban and rural, and now sets the dividing line at 2,500 whereas it was formerly at 4,000 and still earlier at 8,000. This means that for census purposes towns and villages of less than 2,500 inhabitants are included with open country." 2

With the above United States' division in mind, all small high schools in the state were chosen. Practically all are in very small towns, some not even being in towns

1Mind and Hand, by Charles Ham, with Introduction to third edition by Colonel Francis W. Parker.

2Rural Sociology by J. M. Gillette, PhD p. 79.

at all, while in the places slightly larger than could be gauged by government standards, the term "union high school" proved the school to be drawing largely on the country for its support.

THE PURPOSE OF THIS PAPER

As a student of Agricultural Economics and Rural Sociology, the writer is interested in every influence which tends towards the betterment of the life of the young people of the rural sections.

"The tendency in civilized society during recent times has been to place increasing emphasis upon education, says Dr. Gillette, and farther on in the same page he continues, "and since society is constituted of vocational structure, or interests, whatever else it may be this means that every individual should be trained in a vocation. The schools of every community would seek to qualify the young for the callings which the majority of citizenry are liable to follow. For the men who operate the farms this would mean a specific study of raising crops and stock, of machines in order to be able to operate and repair them, of the best methods of constructing fences, buildings, wells, and so on; and if the school course is extensive enough of simpler phases of marketing produce, managing the farm, and other problems connected with production. For women it

means a study of productive functions farm women have to perform, such as the choice, preparation, and conservation of foods, planning of homes, choice of home equipment, care of furnishings, care of the sick, and child study and care of children, including attention to their ailments and proper feeding.

It goes without saying that the methods of training in these directions should consist of a combination of technical instruction practical application or use, and social insight. Mere technical training information ~~apart~~ from practical work, while perhaps better than nothing, comes far short from training for a vocation."¹

Following the ideals laid down by Dr. Gillette, that education is the vital issue in rural life as elsewhere, an effort has been made to make a careful survey of the manual training situation of the rural high school sections of California. What are the needs of rural life and how are they being met? Does our rural youth need trade training or hand training? is it a question of a training for a specific line of work or a general practical training to prepare for an all round varied life of farming?

AIMS OF MANUAL TRAINING

One of the many debatable questions in connection with manual training has been its purposes and aims.

¹Rural Sociology by J.M. Gillette Ph.D. pp 401-2

The purely practical individual always presses with a heavy hand in the direction of strictly trade training, scoffing at any purely educational value. Another group just as devoutly holds up the ideals of hand and home training.

Before taking up California's case in particular, a brief review will be made of past and present trends.

EARLY INFLUENCES AND TRENDS

"The ideal school is an institution which develops and trains to usefulness the moral, physical, and intellectual powers of man. It is what Comenius called Humanity's work shop, and in America it is becoming the natural center of the public school system.

"The building, well designed for its occupancy, is large, airy, open to light on every side, amply provided with all appliances requisite for instruction in the arts and sciences, and furnished interiorly and exteriorly in the highest style of useful and beautiful architectural effects. The distinguishing characteristics of the ideal school building is its chimney, which rises far above the roof, from whose tall stack a column of smoke issues, and the hum and whir of machinery is heard, and the heavy thud of the sledge hammer resounding on the anvil, smites the ear.

"Is it then, a factory rather than a school? No. It

is a school; the school of the future; the school that is to dignify labor; the school that is to generate power; the school where every sound contributes to the harmony of development, where the brain informs the muscles, where the thought directs every blow, where the mind, the eye, and the hand constitute an invisible triple alliance. This is the school that Locke dreamed of, that Bacon wished for, that Rousseau described, and that Comenius, Pestalozzi, and Frobel struggled in vain to establish." 1

"While many early advocates of the educational value of manual occupations seem to have had prophetic insight into its true significance, and the writing of some indicate pretty clear intellectual conception of the broader and higher views, and while the idea of preparing the children for trades has been continually repudiated, it is clear that the work has not always risen above the idea of improving visual perception and developing manual skill." 2

"The primary object of the Russian method was to teach the child manual work, if not directly for the purpose of fitting him for a future vocation in the arts or trades, at least to make him more capable in case he should select some mechanical pursuit.

"The object of the French system is clearly expressed

1 Mind and Hand by Charles Ham, 3rd edition, pp. 1-2

2 The Educational Meaning of Manual Arts and Industries by R. K. Row p. 34.

in the word of the French minister of Public Instruction:
'The love of work can only come through the habits of working, and reciprocally the habits of work can only come by implanting a love for it'." ¹

"In Germany and England the movement at first met much opposition from educators because it seemed to be an attempt to yoke the trade school with the school of letters. It may seem a strange, unwarranted statement to say that in America the general conception of manual training has not been much higher or broader. Look at some of the evidence.

"It was first introduced in this country into purely technical and industrial institutions, and the work was generally carried on in the same way as in a good trade school.

"The next step was the establishment of special departments in high schools for those students who were repelled by the regular courses. Though it is working its way downward into the common schools, it is usually limited at first to one or two higher grades.

"In 1906-7 there were 644 cities of over 4,000 population teaching manual training in the public schools, of which nearly one-half had some work below the fifth

¹ The Sloyd System of Woodworking by B. B. Hoffman pp. 14-19-23.

grade. But of the students taking this work only about 25 per cent are in the elementary schools.

"Often the views were very narrow. In many cases the first qualification sought in the teacher of manual training was skill in the use of tools. Frequently that was the only educational qualification required. The first manual training school the writer knew was put in charge of a carpenter, a man who for thirty years had done nothing but build houses, a man who knew nothing of schools, of books or boys. The school lived less than half a year." ¹

Dr. W. T. Harris in his Psychology of Manual Training says, "When we admit that the use of tools in the manufacture of articles of wood or iron is educative we do not say much for it. But is claimed that skill in the use of tools in these trades would be valuable to all no matter what their employment might be. Manual training, if it includes only wood and metal work, fits only 8 per cent for their vocation, and more or less unfits for their vocation a large part of the remaining ninety-two per cent of laborers."

But turning to Dr. C. M. Woodward, one of the pioneer advocates in this country, the following will be found:

¹ The Educational Meaning of Manual Arts and Industries by Robert Keable Row pp. 34-35-36.

"The youth of to-day are to be the men of the next generation. It is important that we keep their probable life work in view in providing for their education. As has often been said, nearly all of our skilled workmen are imported, our best machinists, miners, weavers, watch makers, iron workers, draughtsmen, and artisans of every description, come from abroad, and this is not because our native-born are deficient in natural tact or ability, nor because they are in point of fact above and beyond such occupations, but because they are without suitable means and opportunities for getting proper training." ¹

"Here by an early advocate of manual training is shown a trend toward trade training, and while much may be offered in defense, it cannot affect the verdict that even in America the general conception of manual training has been largely limited to the idea of preparing for manual trades, but the point is that this is not the chief reason for manual arts and industries in the elementary schools." ²

PRESENT DAY TRENDS AND OPINIONS

"In the United States the term "industrial education" is frequently used to designate everything from

¹ The Manual Training School by C. M. Woodward pp. 289-90.

² The Educational Meaning of Manual Arts and Industries by Robert Keable Row p. 38.

the simplest form of bench work in the elementary schools to full-time trade-school work and the work done in the training departments of industrial plants. This broad use of the word often leads to considerable confusion, especially since certain types of industrial education are classified as industrial arts, manual arts, or manual training. A decision as to the classification of industrial work should be based upon the nature of the objective set up for training.

"The objectives for industrial-education courses are best defined on the basis of function. What contribution does the training offered in one of these courses make toward qualifying one to perform any of the life activities which require some level of manual dexterity and knowledge for its performance is the first question that should be asked in determining what courses shall be offered and to whom they shall be offered. During the past two years there has been an increasing tendency to define objectives in terms of ability to perform worth-while activities.

"The important objectives for industrial courses which are generally recognized are as follows:

"I. To train the hand and eye in the intelligent use of tools and materials through certain fundamental operations which it is well for an individual to be able to perform, regardless of his occupation.

"2. To develop an appreciation of constructive work with different types of materials, in order that the individual may be a more intelligent consumer, regardless of his occupation.

"3. To gain an insight into and an appreciation of some of the important industrial arts, in order that a pupil may make an intelligent choice of an occupation.

"4. To develop ability to perform a variety of practical tasks sufficiently well to meet the general social demands and the needs of home life but not necessarily up to the standards of occupational practice.

"5. To prepare an individual for profitable and advantageous entrance into employment in a definite industrial occupation, with the status of an advanced apprentice.

"6. To provide an opportunity for those who have already entered occupations to add to the knowledge and skill they already have, in order that they may become more expert workers, with increased earning capacity and a better chance for promotion.

. The first four objectives are or should be those of manual training or manual arts departments in the elementary schools and junior and other high schools. There is considerable evidence to support the statement that the fourth objective is recognized to an increasing

degree as one of the most socially worth-while objectives for industrial arts and manual training courses. The last two are specifically vocational objectives and should characterize the work of every school or class that claims to be vocational.

"The fifth applies to full-time trade extension evening schools, and in most cases to part-time trade extension classes.

"Definite objectives must be set up in terms of abilities to perform some specific life activities in these lines and which will qualify one for normal living experience." ¹

"Not very long ago a leading editorial in a California newspaper had this to say:

'What is your plan or program?

'What are you aiming at?

'What is your stated or implied central purpose of education?

'What is your philosophy of education?

'What chiefly is training for?

'You are saying much about measurements; but measurements for what?

¹ Industrial Education by Maris M. Proffitt, Specialist in Industrial Education, Bureau of Education, Biennial Survey of Education 1922-'24. pp 170-171.

'Even if you were building a house, you would be guided by plans and specifications. Now, you are our acknowledged character builders on a country-wide scale; but what are your plans? Come on with your clear-cut, definite and unifying outline of what education must accomplish, and we will back you with enthusiasm.'" ¹

HOW MANUAL TRAINING HAS GROWN IN CALIFORNIA

The growth of manual training in California parallels the growth of the work in other leading parts of the United States. Hence a brief outline of the development of manual training will be given in order to show California's development in relation to other parts of the country.

Accurate information concerning the number of public high schools teaching manual training in the United States, the number of subjects taught, and the number enrolled during the early period is hard to find. The best sources found, however are the reports of the United States Commissioners of Education.

The following statistics on manual training in the United States, taken from these reports, will throw some light upon the subject. The report for 1883-84 reads as follows:

¹ Report of Commissioner of Industrial and Vocational Education for California for the biennial period ending June 30, 1926. by Nicholas Ricciardi, Commissioner of Industrial & Vocational Education.

"So far as reported to this office the cities in which provision for manual training has been made in connection with the public schools, or under the auspices of the public school boards, are Boston, New Haven, Philadelphia, Baltimore, Cleveland, Toledo, Chicago, Moline, and Peru.

"The shop work was adapted to the general training in mechanic arts. Twenty boys were to be handled at a time in classes of half day instruction, making a total of 200 boys per week. The cost of instruction for each boy two hours a week for a year amounted to \$8.25." ¹

From the report of 1885-86 it was found that a large number of cities had been added in the two years following the report of 1883-84: such city systems as Denver, St. Louis, Minneapolis, New Orleans, Nashville, Rochester, Brooklyn, Lansing, Knoxville, St. Ignatus, Montana, and Santa Fe. ²

In the same report the following extracts are of interest in relation to California.

"Oakland, California owns twenty school buildings. The schools are divided into eleven grades, of which four form the primary, four the grammar, and the remaining three the high schools. As a beginning in the

¹Report of Commissioner of Education 1883-84, Vol. I, pp. 94-95.

²Report of Com. of Education 1885-86 pp. 600-603.

direction of manual training one of the schools has been provided with a complete carpenter shop in which classes are being trained as wood workers.

"In San Jose, California, as an experiment, instruction has been given during the year to some pupils in needle work and wood carving, and as a result it is proposed to add industrial training to the school courses."¹

The Cogswell Polytechnical College of San Francisco, was also a leader in manual training work at this early date (1887).

In the preliminary meeting at which the trust deed and by laws were drawn up and accepted, on the nineteenth day of March 1887, there was incorporated the following resolution:

"We have invited you to-day to be present to assist us in taking what seems a very important step in the educational history of the state. It is no less a step than the founding of a polytechnical college for the purpose of affording the boys and girls of the state a practical training in the different industries, a thorough knowledge of which is necessary to success in life."²

¹ Report of Commissioner of Education 1885-86 pp 221.

² The Trust Deed and By Laws Pamphlet of the Cogswell Polytechnical College page 1.

In volume II of the report of the Commissioner of Education for the year 1893-94 are given some definite statistics on the California situation. They are as follows: ¹

City	Date of beginning	Number of teachers	Number of Children
Oakland	1883	1	2,561
San Diego	1891	5	960
San Francisco	1892	2	706
Santa Barbara	1894	2	232

Even in the early beginning of the work, the range of the field covered is interesting and shows some careful thought on the part of those in charge. From the report of the United States Commissioner of Education for the year 1893-94 Volume II., the following tabulation has been taken to illustrate the trend of the work in the early days:

¹ Report of the Commissioner of Education Vol. II, pp. 2093-96, year 1893-94.

City	Branches of instruc- tion	Grades in which taught	No. of in- struc- tors	No. of pupils -male female	No. of class- es
Oakland	Mech. Dr.				
Oakland	Clay mod- eling	1 & 2	1	973	1,1186 46
Oakland	Paper Cut- ting	1 & 2	1	973	1,1186 46
Oakland	Carpentry	8 & 9	1	173	0 7
Oakland	Carving	8 & 9	1	0	229 7
San Diego	Paper Cut- ting	5th	1	120	0 6
San Diego	Sewing	3 & 8	1		650
San Diego	Carpentry	6,7,8	1	190	0 12
San Francisco	Mech. Dr.	Poly.H.	1	30	50 6
San Francisco	Carpentry	Do	1	52	0 2
San Francisco	Sewing	4,5,6	1	0	250 8
Santa Barbara	Cooking		1	3	79 6
Santa Barbara	Sloyd		1	138	12 8

In volume II., of the report of the United States Commissioner for 1900, it was found that a number of schools had been added to the list of those reported as giving manual training in California.

The names of the new members added to the list are as follows: "Fresno, Los Angeles, Pasadena, San Diego, Stockton." ¹

New lines had also been added since the report made in 1893-94. Forging, patternmaking, moulding, machine-shop work, shoe repairing, printing, electricity, butter making, laundry, drugs, photography, tailoring, cooking were all new subjects on the list.

By 1903 California had made still further progress in her development of manual training branches, and had added several new cities until she had a total of fourteen on her list, of which Alameda, Bakersfield, Pnomia, and Redlands form the new names.

As compared to central and eastern states California's rating made a favorable showing. Though not the highest on the list of states with cities offering manual training, she was by no means near the bottom.

A comparison of some of the leading states at this date gives an opportunity for an interesting study:

¹ Annual Report of the United States Commissioner of Education for the year 1900 Volume II, pp. 2438-'52.

States	Number of cities giving manual training	Grades in which courses are given
Alabama	4	1 - 8
Arkansas	1	7 - 8
California	14	1 - 11 & H.S.
Colorado	4	1 - 12
Connecticut	9	4 - 9
Delaware	1	4 - 8 & H.S.
Florida	1	1 - 8
Georgia	9	1 - 8
Idaho	1	1
Illinois	23	1 - 12 & H.S.
Indiana	14	1 - 8 & H.S.
Iowa	7	1 - 8 & H.S.
Kansas	5	1 - 8 & H.S.
Kentucky	2	H.S.
Louisiana	1	7 - 10
Maine	5	6 - 10
Maryland	5	1 - 10 & H.S.
Massachusetts	47	1 - 13 to H.S.
Michigan	18	1 - 12 to H.S.
Minnesota	7	1 - 3 & H.S.
Mississippi	2	1 - 8
Missouri	10	1 - 8 & H.S.

States	Number of cities giving manual training	Grades in which courses are given
Montana	1	5 - 8
Nebraska	3	7 - 12
New Hampshire		5 - 9
New Jersey	22	1 - 12 & H.S.
New York	25	1 - 12 & H.S.
North Carolina	2	6 - 10
Ohio	14	1 - 12 & H.S.
Pennsylvania	14	1 - 14 & H.S.
Rhode Island	3	4 - 12 & H.S.
South Carolina	4	1 - 6 - 7
South Dakota	2	1 - 8
Tennessee	3	1 - 10
Texas	5	9 - 11
Utah	3	1 - 8
Vermont	1	6 - 7
Virginia	4	7 - 10 & H.S.
Washington	1	H.S.
Wisconsin	17	1 - 12 & H.S.
	<u>Leaders</u>	
Massachussetts	47	1 - 13 & H.S.
New York	25	1 - 12 & H.S.

States	Number of cities giving manual training	Grades in which courses are given
Illinois	23	1 - 12 & H.S.
New Jersey	23	1 - 12 & H.S.
Michigan	18	1 - 12 & H.S.
Wisconsin	17	1 - 12 & H.S.
California	14	1 - 12 & H.S.
Indiana	14	1 - 12 & H.S.
Pennsylvania	14	1 - 14 & H.S.

The final results show that California tied with three other states for seventh place in the list. Those states which tied with California are Indiana, Ohio, and Pennsylvania, while those above are Massachusetts, New York, Illinois, New Jersey, Michigan, and Wisconsin.¹

¹Annual report of the United States Commissioner of Education for the year 1903 Vol. II pp. 2145-'46.

THE GROWTH OF MANUAL TRAINING
UP TO THE PRESENT

The feeling toward manual training today in the minds of the trustees in California can be partly judged through a study of the Directory of Public Secondary Schools in the State of California. ¹ This Directory is published each year by the California Society for the Study of Secondary Education, and is thus by them brought up to date.

The following statistics give an idea of the growth of manual training since those early days in the eighties.

Number of high & junior H.S. in the state	No. of rural H.S.	No. of H.S. listed as giving M.T.	No. of H.S. teachers listed in the state	No. of Manual Training teachers	Percentage rate of shop teachers
550	225	525	13,200	4,000	32%

This shows that out of a possible 550 high schools in the state 525 have some kind of shop work, leaving only 25 without manual training. A further study of the directory shows that these 25 are all schools of the very smallest type with only two or three teachers at best.

¹ The Directory of the Public Secondary Schools for the school year of 1925-1927.

Of the list of teachers, the figures show that of the total of 13,200 high school teachers 4,000 or 32 per cent are teaching some form of manual training. This would lead one to believe that the school trustees must feel that they are getting something for their money.

SOME OF THE PROBLEMS OF RURAL LIFE

In order to have a better background for the study of the status of manual training in the rural high schools, and the part that such school work plays in the community, an effort will be made at this point to list some of the needs and problems of rural life.

Dr. Ellwood P. Cubberly of Standford University, says, in a chapter on Rural Life and Needs of To-day, "The great changes which have taken place during the past half-century in practically all of the conditions surrounding rural life have created a rural-life problem of large dimensions. Reconstruction and reorganization are necessary if rural society is to meet successfully the changed conditions of modern life. Such reconstruction and reorganization ought to be comprehensive and fundamental, and because of this naturally will require time for accomplishment.

"The main single deficiency in rural life to-day is the lack of enough of the right kind of education. The general lack of scientific knowledge relating to farming

and to the needs of the rural home life, on the part of rural people, has long been a common observation. Conversely, the main single remedy which must be applied to rural-life problems is educational, and consists largely in redirecting of rural education itself. By means of redirected education we may hope to disseminate new knowledge relating to rural needs and problems; to teach young people simple agricultural facts and processes; to awaken a deep love for the open country on the part of those born there and a desire to live there; to develop better standards of taste for estimating pleasure and attractions outside the farm; to stir into action community forces which are now dormant; and to make of the rural school a strong and efficient social center working for the upbuilding of varied interests of a healthy rural life..... The reorganization and re-direction of rural education is the main key to the solution of rural life problems."

Farther on he continues. "The real underlying social problem which faces us, is how to maintain a satisfactory American civilization on the **farms** of our nation. Farm ownership by the many rather than by the few, and farm ownership rather than farm tenantry are what are most desired. The typical American farmer of the past has been essentially a man of the intelligent middle class, owning a medium-sized farm, maintaining a good standard of

living, educating his children well, and he himself interested in the neighborhood and in local affairs. How to preserve this standard, and how to develop such standards in the new farmers is a very important social and educational question." ¹

In her book "Country Life and the Country School" Mabel Carney, director of the county school department in the Illinois State Normal University says, "The most serious condition of the present country life is the silent but startling migration of the rural population to the towns and cities. To the ambitious country boy the city has always proved alluring. It seems to offer a larger field of social activity and conquest. That this conquest is for the few he has usually failed to realize, and has thrown himself into the thickest of the fray forgetful and unconscious of the many neglected opportunities in the home community.

"Rural migration no longer means only the occasional shifting of a few brilliant sons to the city as formerly. It now implies the uprooting and withdrawal of whole families, whose members, for the most part, represent the highest idealism and ambition of the country community.

¹ Rural Life and Education, E. P. Cubberley pp. 104-6.

As a result leadership has been extracted from rural localities, agriculture has declined and country life has lost prestige both socially and economically.

"The problem of keeping the youth of the present generation upon the farm, and of preparing them for country life in its fullest and richest sense is an issue of fundamental concern in our national welfare.

"The farm problem, then, in its most fundamental aspect, is the problem of maintaining a standard people upon our farms, or as Professor Liberty Hyde Bailey has put it, it is the problem of developing and maintaining on our farms a civilization in full harmony with the best American ideals."¹

Professor Howard T. Lewis in his book, "The Rural School and the Community", gives the following as his ideas of the rural problems of to-day: He groups these problems as three-fold "technical, economic, and social". The technical have to do with such things as drainage irrigation, fertilization, feeds and feeding, farm machinery; the economic have to do with buying and selling, marketing processes, rural credit; the social deal with the educational, cultural, and religious organizations, lodges, amusements, questions of population, pathological conditions, and the like.

¹Country Life and the Country School by M. Carney p. 1-

"Of these three themes, it may be said with a good deal of truth, that though oft times neglected, the value, need, and place of the purely technical questions have been receiving in times past the bulk of the attention by men whose influence counts most. And within more recent times, men have devoted a very large amount of attention to the purely economic phase of rural life.

"In view of the technical advance, therefore, the proposition resolves itself increasingly into an economic one. The essence of the whole matter is that the farmer has not taught himself to look upon farming as a business proposition in the same light as the manufacturer or merchant looks upon his business. In fact until the farmer can learn to look over his own fence to the world outside; until he can come to see that farming is a business with all of the dignity, responsibility and importance of other business, he must continue to occupy an inferior position.

"It is not however, with this aspect of rural problems that we are primarily concerned. In fact there are many who would contend that technical problems and economic aspects are not fundamental weaknesses. They argue that the problem of education is more significant as a line of endeavor. The Country Life Commission appointed by President Roosevelt said (p. 53) that the schools

are held to be largely responsible for ineffective farming, low ideals, and the drift to the town. Bailey for instance calls the schools the Fundamental Problem. Whether or not this is so, it is at least true that it is equally important."¹

THE RURAL SCHOOL PROBLEMS AND NEEDS

Dr. Homer H. Seerley, President of the Iowa State Teachers College, in his book "The Country Life" says of the rural school:

"Its province and opportunity is not that of subordination or inferiority but of coordination with actual life and superiority in its privileges and opportunities. In no other school does the practical hold so large a place or receive as ready a response from the pupils. The very occupation in which they are engaged requires a study in an elementary way of many arts and sciences and continually emphasizes with them the necessity of more knowledge and more application of judgment. This kind of knowledge may not constitute a part of the program of studies of colleges or universities but is of larger importance to the industrial classes than the knowledge that such institutions are founded to give.

"Country school education should glory in country life, country occupations, and country possibilities

¹The Rural School & Community, H.T. Lewis, pp. 13-15

because there are no opportunities offered to a youth that guarantee as much average prosperity, as much average comfort, and as much average chance for reasonable success and happiness.

"Schools are organized, equipped, and conducted for the purpose of giving an opportunity to secure an education. The studies, the employment, and the exercises taught in them are selected because of their assumed usefulness in producing full development, positive culture, and efficient training. The real work that the pupils do for themselves constitutes the actual benefits that are obtainable.

"Country life can be barren in social opportunity and social training. This condition often occurs among the best people in the country communities and easily dissatisfies spirited young people. To remedy such an unfortunate state of affairs as this is not impossible, and falls directly in the province of the rural school.

"Here is where intelligence, scholarship, knowledge of human nature, and skill as an instructor all play a part. The social side of school has a decisive effect in securing perfect attendance, punctuality, good lessons, and application to the task assigned.

The first step to progress and success in all

public affairs is dependent upon proper organization and a perfect cooperation. There must be union of effort in undertaking any such great movement as public education. There should be some organized activities that should be conducted for the benefit of the people of the community. Boys and girls clubs for agricultural and home economic work should be organized. The school plant should become the social civic center for meetings, lectures, library work and fairs."¹

The teacher must become a part of the community, and this interest must be deep seated and true. This interest must include farming, and must reach out into the open fields of rural life.

In the words of David Starr Jordan "The knowledge which is of most worth to most people is that which can be most directly wrought into the fabric of their lives. And the discipline which is of the most value to the most people is that which can best serve in unfolding their individualities." If this be true the teacher must know the fabric of the daily life of his pupils and the direction which the unfolding of their individualities should take. He cannot know these things and remain ignorant of the farm and its possibilities.

George Herbert Betts and Otis E. Hall in their book "Better Rural Schools" have written a chapter on

¹The Country School, H.R. Seerley, pp. 10-12, 25, 38, 112.

the rural high school, in which they present a number of phases of the school problem.

"The high school is an American product of the last fifty years, and is an outgrowth of the demands made upon education to answer the needs of the community. The rural high school is a still later product and thus has a wide field before it. Rural children require as much education as children in town, for the demands placed upon their intelligence and training, in a career on a modern farm are as great as will be made of a worker in urban life.

"The rural high school is a natural outgrowth of the movement toward consolidation. It needs hardly be argued that the one room school can ever support a high school course, nor ought it under normal circumstances to undertake the teaching of high school branches. It has thus been almost uniformly found that the consolidation of a number of elementary schools into one school has brought about a demand for high school subjects.

"In these schools more and more the traditional disciplinary subjects are supplanted by concrete and practical studies related to occupational interest.

"The equipment for the rural high school should be wholly adequate to the demands to be placed upon it. Many high schools connected with stronger consolidated

schools now have buildings, laboratories, gymnasiums, baths and other necessary accessories quite the equal of those of the city schools, and this is as it should be. The expense of maintaining these schools after they are established is no greater in proportion to the taxable property than in most cities, and is considerable less in many cases.

Not only is the scholarship of the highest rank, but the graduate receives his full share of honors when he enters on a course in higher institutions. These rural high schools have their literary societies, dramatic organizations, debating clubs, orchestras, and all else that goes to supplement on the social side of the regular program of the modern school.

"Wherever the high school has been installed as a part of the rural system, it has rapidly grown in favor among its constituency, and has gained a permanent hold on their loyalty and support. Once the farming community comes to see the necessity and value of secondary education for its children, the country child will have as favorable an opportunity for high school training as the city child. Only when this has been accomplished will our system of rural high schools have fulfilled their obligation to the children of the farm".¹

¹The Rural High School by George Herbert Betts and Otis E. Hall, pp. 258-271.

A SUMMARY

In order to keep the field covered thus far more clearly in mind a brief review will be made at this point.

The paper begins with a definition of the main terms used in the title. Following the definition of terms, the purpose or object of the research is taken up and discussed.

To set forth clearly the ideas of any subject, its aims and ideals must be given, and this has been done, followed by a brief historic sketch of the growth of the work in the United States in general and in California in particular.

Again with the problem of youth in mind, for which all education should be planned, a study of rural life was taken up in order to find out if education is really answering the demands made upon it.

Material was then gathered upon the subject of the rural school problem, its purpose, efforts, and results, lastly coming down to a concrete discussion of the rural high school and the part it must play in the lives of its constituents.

THE CALIFORNIA RURAL HIGH SCHOOLS

All of the previous work given in this paper, too, is only preparatory to the main issue of a careful survey of the manual training situation in the Rural High Schools

of California. It was to build up a foundation for judging whether the present status is all that it should be, and whether the work is answering a place in the lives of the people it is expected to serve.

There are somewhat over 200 rural high schools in the state of California, and in practically all of these some kind of shop work is being carried on.

Personal letters were sent out to these two hundred, and from the first seventy-five or more a ready response was received. Later on in the year, however, it was more difficult to get replies so that finally only a hundred responded. The data from these hundred, though, covered so nearly the entire state that it seemed reasonable to believe that quite a thorough estimate could be had from the reports.

THE SURVEY

The survey was made through the medium of an information sheet which was mailed, along with a personal letter, to each of the rural high schools. Forty-two counties were represented in the replies that were received, and covered the state from Del Norte on the north to San Diego on the south, and from Tuolumme on the east to Monterey on the west.

An effort was made to make as condensed a questionnaire as possible, hoping thereby to have the sheets well

filled when returned. The results in this respect were quite gratifying, for out of the one hundred letters returned, ninety were well covered in every way.

One error was made in the time of mailing of the last seventy-five letters, the time being some three weeks before Christmas, which probably accounted for the falling off of the replies towards the last. However the hundred letters covered the state so completely that the results should be quite authentic.

OUTLINE OF INFORMATION SHEET OR QUESTIONNAIRE.

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Instructor's name _____

Address _____

Training.

- (1) In what type of school were you trained?
 - a. College _____
 - b. University _____
 - c. Technical school _____
- (2) In what line at college did you a. Major _____
b. Minor _____
- (3) Do you hold a degree? _____
- (4) Have you had any practical trade experience? _____
 - a. In what lines? _____
 - b. For how long? _____
- (5) Are you teaching under the Smith Hughes Act? _____
- (6) Do you have a regular or special certificate? _____

High Schools.

- (1) What is the number enrolled in your high school? _____
- (2) What is the number in your Manual Training Department? _____
- (3) How many courses do you offer in your shop work?
 - a. Wood working? _____
 - b. Mechanical drawing? _____
 - c. Auto Mechanics? _____
 - d. Farm Mechanics? _____
 - e. Blacksmithing? _____
 - f. Sheet metal work? _____

- g. Lathe work? _____ h. _____ i. _____
- (4) How much time per week devoted to each class? _____
- (5) What lines are seemingly of greatest attraction to your students? _____
- (6) Do you have plenty of equipment in the way of benches and hand tools? _____
- (7) Do you have any machinery? _____
- (8) Are you in favor of machinery in your shops? _____
- (9) How soon do you allow entering students to use the machinery? _____
- (10) How do you meet the problem of cost of materials?
- a. School pays for it? _____
- b. School pays for part and student pays for part? _____
- c. Student pays for all? _____
- (11) What is the feeling in your community toward shop work?
- a. Enthusiastic? _____
- b. Favorable? _____
- c. Non-committal? _____
- d. Indifferent? _____
- e. Antagonistic? _____
- (13) What part do you take in the activities of your community? _____
- (14) Do you cooperate in any way with the trades in your community? _____

- (15) Can the high school shop work in part-time cooperation with the trades for practical trade training? _____
- (16) What do you feel is the future of manual training?
- a. Hand training? _____
 - b. General practical training? _____
 - c. Training for a greater understanding of life and its problems? _____
 - d. Training for a definite trade? _____
- (17) What is the future of manual training in your high school?
- a. Growing steadily? _____
 - b. Stay the same? _____
 - c. Discontinued? _____
- (18) Has manual training failed so far in California? _____

- (19) What is your estimate of the future of the work in California?
- a. Splendid growth? _____
 - b. Discontinuance? _____
- (20) What suggestions have you for the improvement of the work?
- _____
- _____
- _____

BEGINNING OF THE SUMMARY

In seeking information about a subject one of the first points to consider is the status of the individuals at the head. What type of individual is it that is conducting the piece of work? Where was he trained? Is he a university, college, technical school, or experience-trained man?

If in college, in what did he major and minor, or in practical experience what was his specialty? All of these items enter as elements for forming judgment as to the status of the chosen subject.

On the next page is the beginning of a condensation of the training of all those answering the letters sent out. Following these pages will be found a condensation of their majors and minors along with practical experience and certification. From these pages estimates in still more condensed form will be made.

TEACHERS, HOW TRAINED

<u>Name and county</u>	<u>College training?</u>	<u>University training?</u>	<u>Technical school?</u>	<u>Graduated with degree?</u>
Ahler G. W. San Bernardino	no	no	yes	no
Armstrong J.R. San Luis Obispo	Santa Barbara	U.S.C. U.C.	no	no
Barnet D.C. San Mateo	yes	yes	no	B.S.
Barton L.E. Colusa.	yes	U.C.	no	B.S.
Bentley C.I. Monterey	no	U.C.	yes	no
Benton J.W. San Joaquin	Santa Barbara	yes	no	no
Beafort P. Mendocino	O.A.C.	no	no	B.S.
Bedford M.H. San Joaquin	no	yes	no	no
Batchelder H.H. San Diego	Santa Barbara	no	no	A.B.
Burden H.L. Orange	Santa Barbara	Uni. Neb.	no	A.B.
Brisco C.C. Orange	yes	no	yes	A.B.
Brooks F.E. Orange	Santa Barbara	U.C.	no	no
Brown H.B. Lassen	no	U.C.	Cogswell	no
Coleman R.L. Sutter	no	no	yes	no
Cox Arthur Ventura	yes	yes	no	no
Coster G.V. Sacramento	no	U.C.	yes	working for degree

Name and county	College training?	University training?	Technical school?	Graduated with degree?
Crose I.N. San Joaquin	no	no	yes	no
Cradler P. Monterey	yes	yes	Sweeney Automobile	B.S.
Christensen A. Alameda	no	U.C.	no	B.S.
Curry B.R. Merced	Penn. State	U.C.	yes	B.S.
Cutler B.J. Yuba	yes	yes	no	no
Doyal W.E. Butte	no	U.C.	yes	B.S. M.S.
Druary L.M. San Joaquin	no	yes	no	B.S.
Duston E.W. Sonoma	yes	yes	no	A.B.
Davis Elmer Yolo	no	yes	no	no
Eckley N.M. Colusa	no	U.C.	no	A.B.
Ellestad T.A. Fresno	O.A.C.	Stanford	yes	B.S.
Ellestad M.H. Sutter	O.A.C.	no	Stout	B.S.
Eklof C.M. Colusa	no	yes	no	no
Ernzer P.J. Los Angeles	no	yes	no	no
Farrer P.M. Contra Costa	Wash. State	yes	yes	no
Forbes E.R. Orange	no	no	yes	no

Name and county	College training?	University training?	Technical School?	Graduated with Degree?
Frisbe R.W. Monterey	no	Wooster Ohio U.C.	no	no
Gary Foster W. Los Angeles	no	U.C.	no	no
Gillespie I.L. Tulare	no	no	no	no
Goulet Geo. Santa Clara	Santa Barbara	no	no	A.B.
Gordon B.L. Santa Cruz	yes	yes	no	B.S.
Gunn A.J. Los Angeles	no	U.C.	no	no
Hansen W.E. Merced	yes	no	no	no
Hardebech C.W. Del Norte	O.A.C.	yes	yes	no
Hansen A. San Diego	no	yes	no	B.S.
Hickok C.W. Tulare	O.A.C.	no	no	B.S.
Hudson W.H. Contra Costa	O.A.C.	Stanford	Stout	B.S.
Hunter K.O. Yolo	Wash. State	no	no	no
Hughes S. Napa	no	U.C.	no	B.S.
Jones B. May Solano	no	U.C.	no	A.B.
Johnson W.A. Napa	yes	yes	no	B.S.

<u>Name and county</u>	<u>College training?</u>	<u>University training?</u>	<u>Technical school?</u>	<u>Graduated with degree?</u>
Johnson A.W. Alameda	O.A.C.	U.C.	no	B.S.
Klemegar H.R. Madera	yes	no	no	no
Kishpaugh H.M. Sacramento	no	yes	yes	A.B. M.A.
Kralowec G.I. Tulare	Wash. State	Uni. Wash. U.C.	no	yes
Kenrick E.W. San Diego	Mich. State	U.C.	no	B.S.
Kimmel W. Shasta	O.A.C.	Uni. of Oregon	no	no
Labrum F. Riverside	yes	yes	no	no
Lapham N.P. San Diego	San Diego Teachers	U.C.	no	no
Loomer A.L. San Luis Obispo	Santa Barbara	no	no	no
Longfield J. Kings	no	Uni. of Wisconsin	no	B.S.
Lilley L.D. Monterey	yes	Syracuse University	no	B.S.
Lyman L.L. Santa Clara	yes	U.C.	no	no
Martin J.U. Los Angeles	no	no	no	no
Mayle Frank Tuolumne	no	no	no	no
Morell Chas.R. Siskiyou	Santa Barbara	Santa Clara	no	no

<u>Name and county</u>	<u>College training?</u>	<u>University training</u>	<u>Technical school?</u>	<u>Graduated with degree?</u>
Moody Bert Santa Clara	Santa Barbara	U.C. and Stanford	no	no
Mc Gee L. Stanislaus	O.A.C.	no	no	B.S.
Nall A.H. Marin	Teachers College	no	no	no
Nelson Harry Santa Barbara	yes	no	no	no
Newell W.F. Solano	Teachers College	U.C.	O.A.C.	no
Nixon Rupert Sutter	no	U.C.	yes	B.S.
Nichols V.G. San Bernardino	no	no	Stout	no
Noel F. W. Tulare	Santa Barbara	no	Officer's Training C.	no
Olson H.R. Madera	yes	no	no	yes
Pope G.C. Riverside	C.C. of New York	Uni. of New York	Medical School	A.B. M.D.
Popp F.W. Glenn	no	yes	no	no
Price J.C. Los Angeles	yes	U.C.	no	A.B.
Reynolds L.F. Merced	O.A.C.	no	no	B.S.
Roberts J.C. Stanislaus	no	U.C.	no	no
Rush Clarence Nevada	Santa Barbara	Indiana University	Perdue	no

Name and county	College training?	University training?	Technical School?	Graduated with degree?
Shumann W.L. Tehama	no	no	Tech. of North D.	no
Sloniker M.C. Santa Barbara	Menonomie Wisconsin	no	Stout	no
Smith L.G. Los Angeles	no	no	no	no
Swan H.A. San Diego	no	no	yes	no
Thomas Arthur Yolo	no	no	Tech.Inst. London	no
Tolman J.E. Yuba	O.A.C.	Wash. Univ.	no	B.S.
Watts I.J. Monterey	no	U.C.	no	no
Watts W.P. Butte	O.A.C.	no	no	B.S.
Watson G.K. Kern	no	no	yes	B.S.
Wills C.E. Los Angeles	U.C.	Uni. of Chicago	Santa Barbara	Diploma
Wilson H.A. Merced	no	no	no	no
Wood W.S. Los Angeles	no	no	yes	no

CONDENSED FIGURES ON THE TRAINING OF THE TEACHERS

Number having college training	Number having uni. training	Number having tech.S. training	No. of grad. with degree	No. not grad- uating	No. with- out col- lege	No. from O. A. t. C.	No. from other uni.
52	53	25	42	48	12	15	35

Data of interest can be found from these figures. The training is quite equally divided between colleges and universities, whereas only about one fourth went to strictly technical schools.

Of the total number only forty-two were graduated with a degree, and these degrees ranged from an M.D. in one case to M.S., B.S., and A.B. in others. This would rather lead to the conclusion that technical efficiency was considered of greater importance than the gaining of degrees. However, though practical experience was a strong feature in the reports, only twelve out of the ninety were without college training.

In the list of instructors Oregon State trained in part almost a third of all those answering the questionnaire. This makes rather an interesting commentary on California's lack of teacher training in Industrial lines, and seems very complimentary to Oregon.

MAJORS, MINORS, EXPERIENCE, AND CERTIFICATION

Name	Major at col- lege	Minor at col- lege	Number of years experi- ence	Kinds of experi- ence	Teach- ing under Smith Hughes	Kind of cer- tifi- cate
Ahler G.W.	no	no	17	mill, carp. drafting	no	spec.
Armstrong J.R.	com. mech.	phys. ed.	1	auto mech. plumbing	no	spec.
Barnet D.C.	sci.	for. lang.	20	carpentry	no	reg.&s.
Barton L.E.	voc. ed.	ind. arts	1	carpentry	yes	spec.
Batchelder H.H.	ind. arts	no	1	carpentry	no	spec.
Bentley C.I.	no	no	18	auto mech. mach. shop	yes	spec.
Benton J.W.	no	no	18	auto mech. carpentry	no	spec.
Beaufort P.	Engl.	Ed.	2	carpentry	no	spec.
Bedford J.H.	M.T. Ed.	Engl.	no	no	no	spec.
Burden H.L.	elec. eng.	no	10	carpentry mill.	no	spec.
Brisco C.C.	econ.	pol. s.	yes	wood work mach. s.	no	spec.
Brooks F.E.	com. mech.	no	30	draft, survey.	yes	spec.
Brown H.B.	voc. ec.	no	10	building trades	part.	spec.
Coleman R.L.	mach. shop	no	14	machinist trades	no	spec.
Cox Arthur	ind. arts	no	7	automotive	no	spec.
Coster B.V.	eng.	no	yes	woodwork.	no	spec.
Coulson K.F.	ind arts	ag. eng.	3	auto mech.	no	reg.

Name	Major at col- lege	Minor at col- lege	Number of years experi- ence	Kinds of experi- ence	Teach- ing under Smith Hughes	Kind of cer- tifi- cate
Croese I.N.	no	no	yes	carpentry	no	spec.
Cradler P.	com. mech.	no	yes	carpentry auto	no mech.	spec.
Christensen A.	phys.	math.	3	sheet cabinet	no	gen.
Curry B.R.	chem.	m.eng.	17	mach. supt.	no	gen.
Cutler B.J.	no	no	20	building t.	yes	spec.
Doyal W.E.	ag.	anim. husb.	4	plumbing build. t.	no	reg.
Druary L.M.	min. eng.	no	16	drafting	no	spec.
Duston E.W.	phys.	math.	1	planing mill	no	reg.
Davis Elmer	agr.	no	12	agr. eng.	yes	spec.
Eckley N.M.	sci.	no	no	no	no	reg.
Ellestad T.A.	m.e.	s.c.	4	cabinet machine	no s.	reg.
Ellestad M.H.	ind. arts.	contr.	2	building	no	spec.
Eklof C.M.	agr.	chem.	6	farming	yes	spec.
Ernzer P.J.	smith hughes	mach. des,	16	mach. s. draft.	no	spec.
Farrer P.M.	mechs.	no	22	auto & f. mech.	no	spec.
Forbes E.R.	shop w.	elec. w.	3	mach. s.	no	spec.
Frisbie E.R.	math.	no	22	auto m. elec.	yes	spec.
Gary F.W.	eng.	no	10	eng. mill drafting	no	spec.
Gillespie I.L.	no	no	7	ag. eng.	yes	spec.
Goulet G.	com. m.	eng. ed.	4	auto elec	no	spec.

Name	Major at col- lege	Minor at col- lege	Number of years experi- ence	Kinds of experi- ence	Teach- ing under Smith Hughes	Kind of cer- tifi- cate
Gordon G.L.	ed.	m.t.	no	no	no	reg.
Gunn A.J.	no	no	13	auto mech.	yes	spec.
Hansen W.E.	no	no	10	gen. const.	spec.	spec.
Hardebeck C.W.	eng.	voc. ed.	1	frame fact.	no	spec.
Hansen A.	sci.	math.	no	no	no	reg.
Hickok C.W.	ind. arts.	pub. s.	8	auto mech.	no	reg.
Hudson W.H.	admst.	ind. arts	2	carpentry	no	spec.
Hunter K.O.	ind. arts.	ed.	no	no	no	spec.
Hughes S.	ed.	eng.	7	machinist	no	spec.
Jones May B.	h.e.	hist. ed.	no	no	no	reg.
Johnson W.A.	m.e.	m.arts	5	building con.	no	spec.
Johnson A.W.	ind. arts	ed.	4	auto m. carpentry	no	spec.
Klemegar H.R.	no	no	10	auto mech.	no	spec.
Kishpaugh H.M.	ed.	psy.	1	carpentry	no	reg.
Kralowec G.I.	ed.	ath.	1	carpentry	no	spec.
Kenrick E.W.	m. en. eng.	no	20	mach. draft	no	spec.
Kimmel W.	econ.	no	1	carpentry	no	reg.
Labrum F.	spec.	no	15	mill wright pattern m.	no	spec.
Lapham N.P.	ed.	eng. hist.	2	printing	no	spec.
Loomer A.L.	ind. arts.	no	some	carpentry	no	spec.

Name	Major at col- lege	Minor at col- lege	Number of years experi- ence	Kinds of experi- ence	Teach- ing under Smith Hughes	Kind of cer- tifi- cate
Longfield J.	ind. ed.	sci.	5	Machinist	no	spec.
Lilley L.D.	agr.	hort.	no	no	yes	spec.
Lyman O.L.	mech.	phy. ed.	20	agri.	no	spec.
Martin J.U.	no	no	20	gen. const.	yes	spec.
Mayle F.	no	no	20	not named	no	spec.
Morell Chas. R.	arch.	no	3	mill w. carpentry	no	spec.
Moody Bert	no	no	7	drafting carpentry	no	spec.
Mc Gee L.	ind. arts	ed.	2	carpentry	no	spec.
Nall A.H.	ind. arts	sci.	20	const. eng. mach.	yes	spec.
Nelson H.	ind. arts	ed.	2	carpentry	no	spec.
Newell W.F.	shop music	hist.	$\frac{1}{2}$	carpentry	no	spec.
Nixon R.	ed.	ent.	1	carpentry	no	spec.
Nichols V.G.	ind. arts	phy. ed.	10	carpentry	no	spec.
Noel F.W.	com. mech.	ed.	2	auto mech.	no	spec.
Olson H.R.	ind. arts	con- tract.	2	building	no	spec.
Pope G.C.	chem	draw.	3	architect	no	reg.
Price J.C.	soc.	math.	no	no	no	reg.
Popp F.W.	no	no	20	wood, metal	yes	spec.

Name	Major at col- lege	Minor at col- lege	Number of years experi- ence	Kinds of experie- nce	Teach- ing under Smith Hughes	Kind of cer- tifi- cate
Roberts J.C.	auto elec.	no	15	auto m.	no	spec.
Rush C.	elec. eng.	no	1	auto mech.	no	spec.
Reynolds L.F.	ind. arts	elec. eng.	no	no	no	spec.
Shumann W.L.	m.t.	math.	1	carpentry	yes	spec.
Sloniker M.C.	build. t.	draft.	10	carpentry	no	spec.
Smith L.G.	no	no	8	contracting	no	spec.
Swan H.A.	manu. arts.	no	4	machinist	no	spec
Thomas A.	no	no	3	carpentry	no	spec.
Tolman J.E.	ind. arts	c.eng.	1	furniture factory	no	spec.
Watts W.P.	ind. arts	no	1	carpentry	no	spec.
Watts I.J.	auto el.	no	15	carpentry	yes	spec.
Watson G.K.	ed.	no	3	auto mech.	no	spec.
Wells C.E.	no	no	some	carpentry	no	spec.
Wilson H.A.	no	no	23	mill work	yes	spec.
Wood W.S.	man. arts	no	5	building	no	spec.

COLLEGE MAJORS AND MINORS CONDENSED

Number who majored in com- munity mech.	Number who major- ed in ind.a.	Number who major- ed in engi- neer- ing	Number who major- ed in chem. and phys.	Number who majored in educa- tion	Number who minor- ed in phy- ed.	Number who minor- ed in educa- tion	Number who minor- ed in his.& math.
6	22	8	5	6	3	5	10

On this sheet an effort was made to see what relationship there was between the majors and minors at college and the field into which the individual finally went. The relationship is evidently quite strong, as twenty-two majored in manual arts, and the large number remaining have related subjects, that is, in the lines of sciences and education.

In the minors there is less of a relationship, and of these some two or three can be given for which there was not room in the main list. They are: entomology, languages, and medicine.

From this sheet there are still omitted a large number who came from the practical walks of life, and so did not have a college major or minor.

One more feature should be mentioned in this summary, for which there was not room at the beginning of the sheet, and that is the credential problem. California is rather strict on credentials and yet here are listed largely special certificates. For example there were seventy-six special certificates to eighteen regular ones.

CONDENSATION OF PRACTICAL TRAINING GROUP

Number having prac- tical experi- ence	Number having 20 or more years	Number having 15 years up to 20	Number having 10 years up to 15	Number having 5 years up to 10	Number having 1 year up to 5	Number having no prac- tical experi- ence
80	10	7	10	10	32	10

From this sheet several items of value can be drawn. Herein lies the reason for the lack of degrees as shown on the first sheets. It will be noted that eighty out of the ninety had some practical experience, and that ten had twenty or more years. In one case even thirty years was reported.

With twenty years of training in the school of practical life not a great deal of time could be left for college or university. These ten, then, were chosen by the trustees because of those very years of practical training.

In the next group, the fifteen year field, will be found some more men trained in the school of life, men who in some cases rather look down on the college bred man as being impractical in what he is trying to do. The question may be asked as to what influence their teaching will have on the future of the young lives under them? Will their products be practical men or college men?

From the ten year on there is a branching toward the university, while over to the other extreme are a few with no experience at all. Probably each group could gain something from the other.

KINDS OF PRACTICAL EXPERIENCE

Number of electrical workers	Number of car- penters and con- tractors.	Number of cabinet makers and mill men	Number of auto mech.	Number of drafts- men	Number of machin- ists	No. of sheet metal workers
5	40	16	20	6	13	4

It will be noted in this summary that some eight trades are listed, in which the workers in wood lead the roll. Next come the auto mechanics and machinists, followed by the electricians, sheet metal workers, and draftsmen.

To the above list a few other trades must be added for which there was no room in the main group. They are, printing, agriculture, architecture, and concrete construction.

From this sheet it may be seen that the rural schools have a fair chance for an insight into the more common trades of the present day.

PERCENTAGE TAKING SHOP WORK AND KINDS OF WORK

No. in H.S.	No. in M.T. work	Per cent taking	No. of class- es in Wood	No. of class- es in W.	No. of class- es in M. Dr.	No. of class- es in Auto	No. of class- es in M. Farm	No. of class- es in M. S. Met	No. of class- es in lathe
285	84	29%	1	1	1	1			1
125	28	22%	1	1	1	1			1
110	27	25%	1	1	1	1			1
280	105	37%	1	1	1			1	
			1	1	1	1		1	1
750	403	52%	1	1	1	1		1	1
800	120	15%	3	3	1			1	1
212	51	24%	1	1	1				
110	20	18%	1	1	1			1	
380	50	16%	1	1	1				1
425	80	19%	3	1	1				1
90	16	18%					2		
120	30	25%	1	1		1			1
500	120	24%	1	1	1	1		1	1
250	80	32%	1	1	1			1	1
200			1	1	1			1	1
225	45	29%	1	1		1			1
356	31	9%	1		1				
70	25	36%	1	1					
700	130	19%	1	1	1	1		1	1
90	12	13%		1		1		1	1

No. in H.S.	No. in M.T. work	Per cent tak- ing	No. of class- es in Wood	No. of class- es in W. M. Dr.	No. of class- es in Auto	No. of class- es in M. Farm	No. of class- es in M. S. Met	No. of class- es in lathe
600	136	23%	1	1	1	1	1	1
166	38	23%	2	3	1	1	1	1
250	55	22%	1	1				
650	230	35%	1	1	1			
430	156	36%	2	1	2	1	1	1
125	18	14%	1					
70	20	29%	1	1				
285	57	20%	1	1	1			
500	200	40%	4	2	3	1	1	2
350	150	43%	5	2				
115	70	61%	1	2	1			
300	48	16%	1	1	1	1		
130	58	45%	1	1	1	1		
170	70	41%	1			2		
500	80	16%	1	1	1	1		1
450	68	15%	1	1				1
225	77	34%	1	1	1			1
450	125	36%	1	1	1	1		1
140	100	70%	2	2	2			1
270	125	46%	3	1	1		1	1
145	44	30%	1	1	1			1
250			1	1	1			1
260	80	32%	1	1			1	1

No. in H.S.	No. in M.T. work	Per cent tak- ing	No. of class- es in Wood	No. of class- es in W.	No. of class- es in M.	No. of class- es in Dr.	No. of class- es in Auto	No. of class- es in M.	No. of class- es in Farm	No. of class- es in M.	No. of class- es in S.Met	No. of class- es in lathe
260	56	22%	1	1	1					1		
350	115	33%	1	1								1
460	190	43%	1	1	1							1
340	130	38%	1	1	1							1
153	30	20%	1	1								
120	18	15%	1	1								
104	24	23%	1	1				1				1
260	60	23%	2	4	1					1		1
			1	1	1		1			1		1
122	44	36%	1	1								
500	80	16%	1	1						1		1
275	55	20%	1	1	1							1
400	75	19%	1	1	1		1			1		1
415	45	11%			1							1
225	30	13%		1	1							1
54	18	33%	1	1								
550	120	22%	1	1								1
450	120	24%	1	1	1							
250	110	44%	1	1	1							1
550	125	23%	1	1	1							
60	14	23%	1		1							
365	60	17%	1	1				1				1

No. in H.S.	No. in M.T. work	Per cent tak- ing	No. of class- es in Wood	No. of class- es in W.	No. of class- es in M. Dr.	No. of class- es in Auto	No. of class- es in M. Farm	No. of class- es in M. S. Met	No. of class- es in lathe
480			1						
195	40	21%	1		1	1		1	1
80	30	37%	1	1		1		1	
300	70	23%	1		1				1
180	65	36%	1		1				1
106	35	33%	1	1					
550	115	21%	1	1	1	1			1
125	12	10%	1	1	1				
112	50	15%	1	1	1	1			1
250	80	32%			1	1			1
200	67	33%	1	1	1				
192	56	29%	2	1		1		1	1
470	154	33%	1	1	1	1		1	1
250					1				
150	31	21%	1	1	1	1			1
700	80	11%			1	1		1	1
550	41	7%	1	1					
285	80	28%	1	1	1	1			1
650	150	29%	1	1	1				
450	140	31%	1	1	1				
125	26	21%	1	1	1				
550	179	33%	1	1	1	1			1
1200	102	8%	1	1	1				1
243	76	31%	1	1	1				1
180	80	44%	1	1	1				

CONDENSED PERCENTAGE TABLE

Table showing the per cent of students taking shop work in relationship to the total school enrollment.

Number of schools having from 70% to 50%	Number of schools having from 49% to 30%	Number of schools having from 29% to 20%	Number of schools having from 19% to 10%
3	31	29	21

This table would seem to indicate that as an average about 30% of the students enrolled in the high schools are actively interested in the shop work. Such a percentage would point toward at least a native healthy condition, and yet leave plenty of room for growth in the manual training field. If there were time it would be interesting to place parallel with this the percentage of girls interested in domestic arts, and thus see how many of our young people are interested in the so called practical fields.

COURSES TAUGHT

Table showing the different lines taught, and the number of schools having classes in those lines.

No.in wood- work- ing	No. in mech. draw- ing	No. in auto mechan- ics.	No.in farm mechan- ics	No.in sheet metal work	No.in lathe work	No.in black- smith- ing.	No.in other lines of work
85	80	61	34	24	60	27	12

From this table it can be seen that the subjects started in the early days of manual training have not yet lost the lead in popularity, but are being closely followed by later comers, that is, auto mechanics and lathe work.

Woodworking will probably always hold a charm for the growing lad, for in the field of wood there are many possibilities of seeing the embryo of his dreams grow into the actual reality. Close on the heels of this first choice comes the demands of practical necessity. The "bug" must be fixed, so that auto mechanics answers a concrete need.

The field of farm mechanics is still in the infant stage and should be developed along with a greater interest in agriculture.

With the development of modern methods of welding it is worthy of note to see that there are yet twenty-seven cases of formal blacksmithing being given. This would give the farm lad good practical training.

GENERAL REPORT ON TIME, EQUIPMENT, ATTRACTION, AND COSTS

Minutes per week devoted to each class.	Line of greatest attraction.	Do you have plenty of equipment?	Do you have any machinery?	Are you in favor of machinery?	How soon do you start entering pupils?	How do you meet the cost of materials?
400	not much difference.	yes	yes	yes	as soon as instructed.	stud. pays
450	printing, auto mech.	yes	yes	yes	second semester.	stud. pays
200	printing	yes	yes	yes	first quarter.	resell at loss.
400		no	yes	yes	second semester.	stud. pays
450	aut. mech. wood w.	yes	yes	yes	as soon as competent.	stud. pays.
450	auto mech.	yes	yes	yes	after passing test.	stud. pays.
400	varies with student	yes	yes	yes	depends on student.	stud. pays
400	about equal	yes	yes	yes	right away.	Stud. pays school pays
400	auto shop	yes	yes	yes	second year.	school pays
400	auto mech.	yes	yes	not much	when competent.	stud. pays
400	electricity drawing					stud. pays school pays
400	drawing auto mech.				3 mo.	
300	wood work	no	yes	yes	6 mo.	stud. pays
400	wood work	yes	yes	yes	2nd half.	stud. pays
200	drawing wood work	yes	yes		quite soon.	stud. pays
300	reed furniture	yes	yes	yes	depends on student.	shop self supporting
400	auto. mech.	yes	yes	yes	immediately.	stud. pays
300	auto. mech. wood work	yes	yes	yes	2nd yr.	stud. pays
400	wood work	yes	yes	yes	after 1st half.	stud. pays
300		fair	yes	yes	when expert.	stud. pays
800	lathe work	fair	some	yes	2nd half	stud. pays

Minutes per week devoted to each class.	Line of greatest attraction.	Do you have plenty of equipment?	Do you have any machinery?	Are you in favor of machinery?	How soon do you start entering pupils?	How do you meet the cost of materials?
300	wood work	yes	yes	yes	after 1 year.	school pays
280		yes	yes	yes	2nd semester.	stud. pays
400	wood work	yes	yes	yes	2nd semester.	stud. pays
400	mech. dr. wood work	yes	yes	yes	2nd year	stud. pays
400	mech. dr.	yes	yes	yes	after 3 mo.	stud. pays
400	auto mech. wood work	yes	yes	not much	after a time.	stud. pays
300	auto mech.	yes	yes	yes	at once	stud. pays
200		yes	yes	yes		stud. pays
400	about even	yes	yes	yes	after experience.	stud. pays
400	auto mech.	yes	yes	yes	after experience.	stud. pays
400	auto mech. wood work	yes-	yes	yes	must qualify	stud. pays
450	wood work	yes-	yes	yes	depends on student.	stud. pays
400	cabinet work	yes	no	yes		stud. pays
300	project work	yes	yes	yes	6 mo.	stud. pays
300	cabinet work	yes	yes	not much	2nd yr.	stud. pays
120	equally divided	yes	yes	yes	2nd term	stud. part
300	metal cab. work	yes	yes	yes	depends on student.	stud. part
600	auto mech. mach. shop	yes	yes	yes	soon	stud. pays
500	lathe work	yes	yes	yes	depends on student.	school pays
200		yes	yes	yes	not at all	stud. pays
480	farm mech.	yes	yes	yes	at once	stud. pays

Minutes per week devoted to each class.	Line of greatest attraction.	Do you have plenty of equipment?	Do you have any machinery?	Are you in favor of machinery?	How soon do you start entering pupils?	How do you meet the cost of materials?
90	auto mech.	yes	yes	yes	soon	stud. pays
300	mech. draw. forging.	yes	yes	yes	2nd term	stud. pays
380	mech. draw. wood work.	yes	yes	yes	2nd term	stud. pays
450	wood work	yes	yes	yes	2nd term	stud. pays
300	fairly even	yes	yes	yes	2nd term	stud. pays
400	mechanics	yes	yes	yes	only supervision.	stud. pays
400	wood work	yes	yes	yes	2nd term	stud. pays
450	equal	yes	yes	yes	as soon as trained.	stud. pays
300	wood work auto mech.	yes	yes	yes	after 6 weeks.	stud. pays
300	auto mech.	yes	yes	yes		stud. pays
400	auto mech. wood work.	yes	yes	yes	as soon as needed.	stud. pays
600	shop	yes	no	no		school pays
300	wood work	yes	yes	yes	after 1 yr.	stud. pays
400	wood work	yes	yes	yes	when instructed.	stud. pays
400	auto mech.	no	very little	no		stud. part.
300	auto mech. lathe work.	yes	yes	yes	3rd yr.	stud. pays
262	wood work	yes	yes	yes	1st yr.	stud. pays
350	mechanics	yes	yes	no	2nd mo.	stud. pays
90	cabinet work.	yes	yes	yes	2nd yr.	stud. pays
400	mech. dr. wood work.	yes	yes	yes	2nd yr.	stud. pays
600	auto mech.	yes	yes	yes	after 6 mo.	stud. pays

Minutes per week devoted to each class.	Line of greatest attraction.	Do you have plenty of equipment?	Do you have any machinery?	Are you in favor of machinery?	How soon do you start entering pupils?	How do you meet the cost of materials?
400	wood work	yes	yes	yes	2nd quarter	stud. pays
225	individual projects	yes	yes	yes	safety first	stud. pays
400	auto mech.	no	yes	yes	2nd term	stud. pays
420	wood work	yes	no	very little		stud. part.
350	wood work	yes	yes	yes	2nd yr.	stud. pays
400	farm app.	yes	yes	no		stud. pays
400	stage craft	yes	yes	yes	2nd term	stud. pays
	wood work	yes	yes	yes	2nd term	stud. pays
400	mech. dr. equal	yes	yes	yes	immediately	stud. pays
300		yes	yes	yes	2nd yr.	stud. pays
450	auto mech.	yes	yes	yes	immediately	stud. pays
450	cabinet work.	yes	yes	yes	after 6 mo.	stud. pays
135	lathe work	yes	yes	yes	soon	stud. pays
400	wood work	yes	yes	yes	after 1st term.	stud. pays
400	auto mech.	yes	yes	yes		stud. part.
180	wood work	no	yes	yes	as soon as competent	stud. part.
420	auto mech.	fair	yes	yes	after $\frac{1}{2}$ yr.	stud. pays
300	auto mech.	yes	yes	yes	immediately	stud. pays
300	wood work	yes	yes	yes	soon	stud. pays
450	wood work	yes	yes	yes	soon	stud. pays
450		yes	no	yes	2nd yr.	stud. pays

TIME SPENT AND LINE OF GREATEST INTEREST

Comparison of time spent by the various schools and
the lines of greatest interest to the students:

Number of schools spending 600 to 450 min- utes per week.	Number spend- ing to 300 per week.	Number spend- ing to 250 per week.	Number spend- ing to 90 per week.	No. vot- ing for wood work- ing.	No. vot- ing for auto me- chan- ics.	No. vot- ing for metal and lathe work.	Number voting for mechani- cal dr., printing & farm me- chanics.
14	36	25	10	42	35	6	10

On this sheet is shown the time spent by the various schools per week on the subject of manual training. It would give an idea of the place the subject held in the minds of the people of the community. The time ranges from 600 minutes at the upper extreme to 90 minutes at the lower. Six hundred minutes would amount to two hours a day for five days per week. That would be a generous share, a third of the school day, and yet fourteen schools reported being in that class.

Thirty-six schools are around the 450 to 300, while the numbers 25 and 10 range down in the lower half. Through it all there seems enough time at least to give the work a good trial.

The figures show that work in wood still has a strong

hold upon the young people, yet auto mechanics is giving the earlier work a close rub. Farm mechanics still needs working up for our rural communities.

EQUIPMENT PROBLEMS

Table comparing equipment needs, and tastes in relationship to machinery.

Number having plenty of equipment in hand tools.	No. not having plenty of equipment in hand tools.	No. having any machinery.	No. in favor of machinery.	No. not in favor of machinery.	No. that permit use of machine after a time.	Number permit use of machine immediately.
76	14	84	83	7	70	20

Here are some more figures from which to draw conclusions as to the status of manual training in the rural schools. The work finds enough favor with the trustees of seventy-six of the schools for them to give the shops plenty of equipment. In other words, only fourteen schools are lacking in hand equipment. In that respect then the school has a fine opportunity to make good.

Eighty-four of the schools have some machinery, and in this age of machinery only seven of the instructors are not in favor of machines.

There is a greater diversity in the opinions as to when machines should be used by beginners. Seventy vote to use it after a period of training and experience, while twenty

feel that no time should be lost in an age in which machines are so much in use. The type and character of the work, however, probably have something to do with the choice of time and use.

MATERIALS AND COSTS

Table showing how materials are paid for in the various schools.

Number in which school pays all.	Number in which school pays a part.	Number in which student pays all.
4	8	78

In this table is shown a nearly uniform custom throughout the shop system, namely, the student pays for what he gets. This condition is probably well, for every young person should learn to value the thing he gets, and that lesson can be learned most easily by having to meet the cost of the things made. It also gives an opportunity to teach some business practices in buying and selling. Probably in the twelve cases differing from the rule, the report is more at fault than the custom.

THE TEACHER'S ACTIVITIES
and
THE COMMUNITY FEELING

What extra-curricular activities do you have?	What part do you take in the activities of your community?	What is the feeling in your community toward shop?	Do you cooperate in any way with the trades?	Can the high school shop do part time work in the trades?
		good	yes	yes
		good	yes	yes
athletics		favorable	no	no
		favorable	no	no
	boy scouts	favorable	no	no
repairing school bus	backing up constructive movements.	favorable	yes	yes
none		enthusiastic	yes	yes
school projects.		non-committal		
	civic work	enthusiastic	yes	yes
none	church w.	enthusiastic	yes	yes
yes		enthusiastic	yes	yes
	anything needed	very good	yes	yes
coordinator	scout	favorable	no	yes
athletics	very little	enthusiastic	no	
radio club, Y.M.C.A.	church, P.T.A.	favorable	some	no
repair work.	band, club, lodge.	favorable	no	no
athletics	farm center	enthusiastic	yes	yes
	C. of C.	enthusiastic	yes	yes
	lodge, church, scouts.	favorable	yes	yes

What extra-curricular activities do you have?	What part do you take in the activities of your community?	What is the feeling in your community toward shop?	Do you cooperate in any way with the trades?	Can the high school shop do part time work in the trades?
class advisor.	lodge, church, scouts.	favorable.	yes	yes
social, music, stage.		enthusiastic	yes	yes
night school, transportation.	Am. L.	favorable	yes	no
extra bldg. school bus	prominent	enthusiastic favorable	yes no	yes yes
		favorable	no	yes
	Kiwanis, lodge, scouts.	favorable	yes	yes
foot ball	farm bureau	enthusiastic	yes	yes
none	church, scouts.	favorable	no	no
none	some	enthusiastic	yes	yes
school paper.	little	enthusiastic	yes	yes
none	much	enthusiastic	some	yes
business, math.	ath., church, lodge.	favorable	no	yes
none	none	favorable	no	no
carpenter club.	church	favorable	yes	no
study advisor.		favorable	no	no
none	C. of C.	enthusiastic	yes	yes
band, bus.	Amer. L.	favorable	yes	yes
motion pictures.	church, Hi-Y.	excellent	yes	yes
		favorable		
	lodge	favorable	yes	yes
school stage.		favorable		

What extra-curricular activities do you have?	What part do you take in the activities of your community?	What is the feeling in your community toward shop?	Do you cooperate in any way with the trades?	Can the high school shop do part time work in the trades?
	civic club	enthusiastic	no	no
general		enthusiastic	yes	yes
	lodge	enthusiastic	no	yes
	lodge	favorable	no	yes
		favorable	yes	yes
athletics	yes	enthusiastic	yes	yes
dramatics, athletics, athletics	choir very little	favorable indifferent	no no	no no
	lodge	favorable	yes	no
vice-prin. class advisor. coach	Kiwanis, church. club work night class	indifferent favorable favorable	yes no yes	no
farm center. coach	improvement club. farm bureau	favorable good		yes no
archery	scouting	enthusiastic	yes	yes
building	C. of C. church.	excellent	no	no
social committee.	boys club activity	favorable favorable	no yes	yes no
none	band, club	good	no	
athletics	farm center	enthusiastic	no	no
	athletics, lodge.	favorable	yes	yes
aid in maintenance.	coop. fruit dealer.	favorable	yes	no

What extra-curricular activities do you have?	What part do you take in the activities of your community?	What is the feeling in your community toward shop?	Do you cooperate in any way with the trades?	Can the high school shop do part time work in the trades?
phys. ed.		good	yes	
club work		enthusiastic favorable	yes	yes
night school, band, orchestra		enthusiastic	yes	
military tactics.	church, lodge. Amer. I.	enthusiastic	yes	yes
	plenty	favorable	yes	no
	active	enthusiastic	no	no
coach, trips, trips	anything in reason.	enthusiastic	yes	no
auditorium lighting.	lodge, church	favorable	yes	yes
ind. A. club	S.S.	enthusiastic	yes	no
		favorable		no
coach football.		favorable		no
shop club	anything	favorable	no	no
furn. weav.	good cit.	favorable	no	yes
		favorable	no	no
	good cit.	favorable	some	some
		enthusiastic		
phys. ed.	church, C. of C. F.B.	favorable	yes	
	C. of C.	excellent	yes	
class&stud. advisor.	Kiwanis, grange, Amer. L.	favorable	no	yes
study hall		favorable	no	no
	ath., Y.	enthusiastic	yes	yes
		favorable		

EXTRA CURRICULAR ACTIVITIES

The following table shows the number who have extra curricular activities and the nature of those activities.

No. who have extra school activities.	No. who don't have extra activities.	No. who have ath-let-ics.	No. who do extra re-pair work.	No. who have clubs	No. who do extra teach-ing and coach-ing.	No. who drive school stage.	No. who have band and other music	No. who have study hall, class advisor, business advisor, social a.
50	40	12	8	7	6	3	5	7

These figures give an insight into a field of work and service. It would indicate that shop teachers are doing more than merely teaching in their individual lines, and that their influence must be felt in their communities. Fifty have extra work outside their chosen field, and yet that does not mean that the forty left are not busy, for perhaps, on the contrary, they are so busy that they cannot devote any more time to other work.

The figures on this page would be gratifying to Professor Howard T. Lewis where he says (see page 24) that one of the problems of rural life is social, that is "cultural, and religious organizations, lodges, amusements" and things of like nature must be brought to the rural community. We have here, bands, coaching athletics, clubs, and social activities all as a part of the life of the young people of the country.

COMMUNITY FEELING TOWARD MANUAL TRAINING

No. of schools in which the feeling is favorable.	No. of schools in which the feeling is enthusiastic.	No. of schools in which the feeling is good.	No. of schools in which the feeling is non-committal.	No. of schools feeling indifferent.	No. of schools which have a negative attitude.
48	34	6	1	1	0

At the beginning of this research, a prominent educator in California said to the writer that manual training was dying out in the state, and that it was only a question of time until it would be a thing of the past. These figures do not seem to justify the gentleman's claim, for out of the ninety only two schools could give a report in keeping with his statement.

Allowing even for bias on the part of the teacher for his own subject, there is still a goodly margin of those who are favorably inclined, so that the status of manual training in the rural schools seems well established.

ACTIVITIES REPORT

Table showing the number taking part in the activities of the communities, and the kinds of activities.

No. taking part.	No. not taking part.	No. in church and Y.M.	No. in lodges.	No. in scout-ing.	No. in club work.	No. in grange and farm centers.	No. in Kiwanis, Legion, and C. of C.
63	27	20	12	8	6	5	12

The figures given here are encouraging to the student of social service for there is an indication of an awakened sense of responsibility of man's duty to his fellow man. Instead of living a secluded life, the teachers here questioned have indicated an active interest in the lives of those around them. It adds another cheering item to check up to the credit of the status of manual training.

SCHOOL AND COMMUNITY COOPERATION

The following figures give an opportunity for estimating the effort for cooperation between the school and the community in the various districts under survey.

No. who cooperate with the trades in any way in the community.	No. who do not cooperate with the trades in any way.	No. who think trade cooperation is possible.	No. who think trade cooperation is not possible.
53	37	44	46

The estimate here given affords an open field for debate on the practicability of actual trade training through part-time work in the commercial shops of the community. Some hold that such cooperation is not possible, while others are just as emphatic in their declaration that the thing can be done, and done well.

Andrew P. Hill of Sacramento, Chief of the Division of House Planning, gave briefly in one of his lectures the fact that the State Teachers College at San Jose not only believes in this plan but that she is carrying the plan into practice in the training of her industrial teachers, and that the results are very gratifying.

Some of the reports gave an item, which is probably very true, and that is that the plan of cooperation is practical in some communities and not at all in others. Geographic isolation in relation to the needed shops would be one definite point to be considered, while a less serious problem would be that of creating sympathy for the plan on the part of the shops in the community.

At least it is one of the questions before the public.
How shall we replace our lost apprentice system?

ESTIMATES ON MANUAL TRAINING

Table showing the future estimates as to aims and purposes of Manual training in general, and the future status in the particular schools.

No. who feel the future will be simply for gen- eral prac- tical training.	No. who feel it will be for better under- standing of life and its problems.	No. who feel the future will tend toward trade train- ing.	No. who feel the future is merely hand work.	No. who look for a future of steady growth in their school.	No. who think the work will stay the same.	No. who look for a decline or dy- ing out of shop work.
65	18	6	1	70	16	2

Here are some rather interesting estimates on the part of those in the field on the future trend of the purpose of manual training. Sixty-five out of the ninety feel that manual training is and will be for the purpose of giving the student a general practical training for life, and is in no sense a trade training.

Eighteen feel that its purpose should be to broaden the outlook of the student in order that he may have a better understanding of life and of his fellow man.

Six have simply the practical trade man's view point, and feel that all future manual training will resolve itself into the trade school type of education, while one individual sees only a line of hand or occupational work, a sort of "busy work."

When it comes to their own schools, seventy vote for a steady future growth. Sixteen think conditions will stay the same, and two have no faith at all. With a ratio of seventy to two the future status of manual training would look to be rather firmly established.

HAS MANUAL TRAINING FAILED

This table shows the estimate on the questions of the failure and the future of manual training in the state.

Number who feel that manual train- ing has fail- in the state.	Number who feel that it has not failed in the state.	Number who look for a dying out in the future.	Number who look for a splendid growth in the future.	Number who feel things will stay the same.
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2	88	1	80	1
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On this final sheet of tabulated figures is given a general estimate of what those questioned feel about the status of manual training in the state of California.

Two feel that the work has failed. Eighty-eight are just as certain that it has not failed. One looks for a dying out of the work, and one feels a little more encouraged and hopes that it will stay the same. Eighty out of the ninety, however, look for a splendid growth along with all other active lines of modern education, so the vote seems almost overwhelmingly in favor of manual training and its status on a firm foundation.

Constructive Criticisms

One of the last items on the questionnaire was a request for personal suggestions or criticisms for the improvement of the work. Below are given those suggestions just as they came in. They are interesting in their varied nature, the one dominant note being "better teachers." This seems more interesting, coming as it does from the teachers themselves.

"All use same type of outline."

"Make the work of practical use."

"Better experienced teachers."

"Raise the standard for teachers."

"Cooperation with local trades people."

"Don't force shop on the boys."

"Better teachers."

"Have better backing from principal."

"Teach religion."

"Meet the needs of the community."

"More mechanical and electrical work."

"Correlate with community needs."

"Make more interesting."

"Establish adult training classes."

"More equipment."

"Better teachers."

"Better teachers not moving so much."

- "Better cooperation with principal."
- "Modern machinery methods."
- "Advanced college credits."
- "Improve the curriculum."
- "Cooperation with the farm needs."
- "Better teachers."
- "Better instructors."
- "Better teachers."
- "Better courses."
- "Some different lines."
- "Better teachers."
- "Better teachers."
- "Give life sized jobs."
- "Better trained teachers."
- "More practical work."
- "Pre-vocational work and then trade training."
- "Trade training."
- "Better outlines of work."
- "Make some work required."
- "Better teachers."
- "Better salaries."
- "Better equipment."
- "More advertising."
- "Requiring the work."
- "Better courses."
- "Better programs with more time for the work."

- "Fitting the courses to the community."
- "Place the shop men on a par with the others."
- "Better organization."
- "Raise the mental ideals of the work."
- "Give practical work."
- "Train for community needs."
- "Find the needs of the community and make the work fit."
- "Better name for manual training."
- "More even backing by school officials."
- "Make courses to fit the needs of the students."
- "Better trained teachers."
- "Standardize all courses."
- "Cooperation with the trades."
- "More training in auto and farm mechanics."
- "Better cooperation between instructors and school boards."
- "Better cooperation between departments."
- "Give union grammar school access to shops."
- "Get parents to respect the dignity of labor."
- "More general information courses."
- "Better instructors."
- "More practical work, have night classes conducted by trades people."
- "Better cooperation with community."
- "Emphasize general education for students."
- "Better teaching."

"More competent instructors."

"Raise educational standards of instructors."

"Standardized courses."

"Better equipment."

"Well trained teachers."

"Practical courses."

FINAL SUMMARY

In summing up the facts for the final estimates of this survey a careful review of the problem will now be given.

The paper has been prepared from the view point of the economist and sociologist whose interests are along the lines of human betterment. That is, what good has rural life and agriculture derived from the establishment of manual training in the community?

On page three of this thesis, Dr. Gillette has pointed out that society is constituted of a vocational structure, and that the schools of every community must seek to qualify the young for the callings which the majority are likely to follow. Here he lists for the farm such tasks as repairing of machinery, building of fences, buildings, wells and so on. Thus we have a definite demand made upon our schools.

On page four these questions have been asked. Do our rural youths need trade training or hand training? Is it a question of training for a specific line of work or a general practical training for an all round varied life?

Referring to Dr. Gillette again the training should be for an all round varied life. While on page seventy-six of this thesis it will be found that of those questioned sixty-five feel that the training is for general

practical purposes, and with that belief in mind their work must be along the lines of general practical training. Only six felt that the work is for merely trade training.

On page twenty-three Dr. Cubberly brings out the fact that the main single deficiency of rural life today is the lack of enough of the right kind of education. He feels that we should disseminate new knowledge in relation to rural needs and problems.

On page twenty-five Mabel Carney points out that one of the issues of fundamental concern is keeping of the youth of the present generation on the farm.

Professor H. T. Lewis groups the problems as technical, economic, and social. We find him listing such problems as feeding, farm machinery, buying and selling, lodges, amusements, religious organizations, and the like, as vital issues in the rural life.

On page twenty-eight Dr. Homer Seerley points out that country education should glory the country life, and schools should be so equipped and conducted as to produce positive culture and efficient training. While on page thirty Dr. Jordan has brought out the fact that the knowledge which is most worth while is that which can most directly be wrought into the fabric of human life.

With the above points in mind what is found as a result of the survey?

Seventy-eight out of the ninety went to their schools carrying with them college training and experience. To this as a background we must add the fact that eighty of them had years of practical experience.

In the schools it was found that an average of thirty per cent were taking shop work. That would mean that nearly a third were being influenced by elective courses of a concrete or seemingly practical nature.

The condensation on page fifty-six listed nearly all of the common practical industries that would be called for on the farm or in the rural sections. Of these, working in wood and auto mechanics led the list in the choice of the students, showing the answering of an actual want.

In the field of time spent in the shops, the report shows that manual training came in for its full share, running up as high as six hundred minutes per week.

The shops as reported, seem well supplied with the necessary equipment for doing good work. Seventy-six report having plenty of hand equipment, and eighty-four state that some at least of their machinery demands are supplied. The machines, too, are reported as being used as soon as safety and efficiency seem to justify, so that the schools are not at an expense supporting idle equipment.

The material is sold on a cost basis and is paid for by the user in practically all of the cases, only four schools reporting that they paid for all of it. This in-

dicates that the communities are willing to meet the running demands of the shop.

In the report of extra activities outside their regular class work, fifty reported such obligations and the list of activities gives a variety of contacts between the teachers and the students. This brings education into the very life of the students affected, as Dr. Jordan would say "into the very fabric of human life."

In the community the teacher again has reported as playing an active part, a vital influence in the lives of the inhabitants of the rural sections. Sixty-three reported taking active parts in community service, and the field covers scouting, church, grange, club work, farm centers, chambers of commerce, Legions, and service clubs.

The feeling in practically all of the districts is reported as being most enthusiastic, good, or at least favorable. This would indicate a satisfactory feeling toward the work in the field of manual training.

In the report on cooperation with the trades and industries of the district, the figures were a little more varied, the vote standing about half and half that such a condition is possible. As there are many things to be considered here, these figures do not seem unfair.

On the question, has manual training failed, the vote was overwhelmingly in the negative, showing that the instructors themselves believe in what they are doing.

As to the future of manual training the feeling was again strongly in favor of the work, and the promise points toward a steady future growth, only two out of the ninety fearing dying out of the work.

It would therefore seem that manual training is answering a place in the "very fabric" of the lives of the people among whom it is being carried on, that it is not only here, but it is here to stay, and that all it needs to carry it on to a still better future is a stronger corps of well trained, devoted teachers.