

COLORADO STATE TEACHERS COLLEGE

BULLETIN

The Junior College Movement

With Special Reference to Educational
and Economic Conditions in Colorado

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and Economic Conditions in Colorado



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The Junior College Movement

I. ARE JUNIOR COLLEGES NEEDED?

The development of the junior college and the increasing establishment of this additional unit to the American educational system suggests beyond doubt the fact that there is a place for the junior college.

From time to time, communities here and there in our nation start a discussion, based on a desire for a junior college. And from time to time the junior college is established, under one form or another, until today there are 146 public junior colleges operating in the United States, as follows:

Arizona	1	Kansas	9	Oklahoma	9
Arkansas	8	Louisiana	3	Pennsylvania	1
California	31	Michigan	6	Philippine Is.	1
Colorado	2	Minnesota	7	Tennessee	1
Florida	2	Mississippi	7	Texas	17
Georgia	1	Missouri	7	Utah	1
Idaho	1	Nebraska	1	Washington	2
Illinois	5	New Mexico	1	West Virginia	1
Iowa	19	North Dakota	2		

This would seem to support the belief that the junior college is a good thing and that it is needed. Leading educational authorities agree that there is a place for the

junior college. That place, they say, is where conditions in the universities and colleges are too crowded to permit proper care and handling of the new students.

In view of this statement, it is well then that the public first of all know what is meant by a junior college. It is a well known fact that the public mind has not fully grasped the meaning of the junior college. In most cases, outside of those centers where the actual need of this new educational unit has warranted the junior college, the agitation for such an institution has been started by a little group, sometimes just one or two individuals. Whatever may have been the origin of the movement, however, the intentions have been well founded. And once started, any movement looking to the establishment of an educational institution quickly gains momentum. Especially is this true where the word "college" is a part of the title.

Individual Citizen Vitaly Concerned

Every community would be proud to have a college in its midst. There is something magnetic about the word. Aside from its magnetism, however, it signifies a cultural influence which any ambitious community counts among its most valuable assets. And so, it takes but the mere hint of a possibility of a college to set a community of even calm people afire with enthusiasm.

One fact should always be borne in mind, and that is that no junior college should be started in this or any other state until those people most concerned know just what it will mean to them.

It is the concensus of educational opinion that the junior college is a local problem. Therefore, the individual citizen in any community where a junior college

is suggested is the one who is vitally concerned. While it is true that in most instances the public junior college is made possible by state legislative enactment, the greater part of the financial burden is thrown back on the local community or district taking advantage of the statute. So, the citizen enthusiastic over the thought of a college should know what a junior college actually means, how it operates, and what it costs. It is for the benefit of this citizen that a careful study of the junior college situation was made and this publication of information prepared.

II. WHAT IS A JUNIOR COLLEGE?

Will C. Wood, former Commissioner of Secondary Schools of California, a state which has the largest number of junior colleges, says:

The junior college is a part of our public school system, and tuition therein should be free.

A junior college is an extension of local high school work to include the thirteenth and fourteenth grades.

In general, it is said that the junior college is an institution offering two years of college work beyond the usual high school level. The North Central Association of Colleges and Secondary Schools adds the statement that the junior college work is based upon or supplements the work of an accredited high school.

One state standardizing agency holds that a junior college is an institution offering one or two years of work **EQUIVALENT TO THAT IN THE STATE UNIVERSITY.**

Another state standardizing agency speaks in terms of **SIXTY SEMESTER HOURS ACCEPTABLE IN THE STATE UNIVERSITY.**

Another requires the curriculum to be equal to fifteen 60 minute recitations per week for **TWO YEARS ON THE COLLEGIATE LEVEL.**

And the general attitude is that the curriculum should be equivalent to that in the first and second years of a standard college and that **THE COLLEGE YEAR SHOULD NOT BE SHORTER.**

The most inclusive attitude is that the junior college should be located in a school district maintaining a high school and warranting expectation of an enrollment adequate for proper development of the institution.

According to all the most reliable information obtainable on the subject of the junior college there can be no doubt that instruction of collegiate rank must be given. The following definition of the standard of work required is taken from a report on the junior college of California by William M. Proctor, in *The Junior College, Its Organization and Administration*. Stanford University, 1927:

1. The admission requirement must be the same as for the University of California
2. The program of studies must include at least two full-year courses of collegiate grade in English, history, mathematics, foreign language, and science
3. Laboratory equipment must be adequate to afford proper facilities for giving science courses of collegiate grade, and **MUST COST OVER AND ABOVE HIGH SCHOOL REQUIREMENTS FROM \$1,500 to \$3,000**
4. **LIBRARIES MUST BE ENLARGED** to meet the new demands of college work for reference books
5. The degree of master of arts should be considered the minimum scholastic requirement for faculty members
6. **SALARIES MUST BE ADEQUATE** to secure competent instructors for the junior college

These requirements, says Dr. Proctor, have remained the basic standards for accrediting "certificate" courses in the junior colleges of California, and might well be considered minimum requirements by other states.

Leading educational authorities agree that there is a well-defined place for the junior college. They say that establishment of the junior college is governed by certain conditions; and those conditions, which are set forth briefly in four paragraphs following, are borne out by investigations, and by statistics based thereon and given in part in this bulletin. The conditions are:

1. Where work of the high school is perfected to the highest degree and is operating on a high level of efficiency
2. In densely populated districts
3. In states where institutions of higher learning are overcrowded and need relief from giving the first two years of work
4. Where the elementary schools, including the rural schools, are highly efficient

Need Comes When Colleges Are Crowded

It is in states where just such conditions exist that the junior college has been established in sufficient numbers to warrant the declaration that they are a success. According to statistics compiled by the Department of Educational Research of Colorado State Teachers College, there are 146 public junior colleges in the United States; and of this number, nearly one-half of them—67, to be exact—are located in three states. The great majority are concentrated in the thickly populated areas of the state of California. They are concentrated, too, where the high schools are ranked on a high level of efficiency and also where the institutions of higher learning are literally jammed to the doors and crying for relief from the constantly increasing student enrollment.

California has 31 public junior colleges.

Iowa, another leader among the states from the standpoint of education, ranks second in the number of public junior colleges. There are nineteen of them in that state.

Texas has seventeen.

The growth in demand for junior colleges has come within the past four years. Over one-half of the 146 public junior colleges (82) have been established since 1924.

It is appropriate to summarize the purpose of the junior college in states where it has been organized the longest. Significant is the comment on this phase of the subject made by Dr. Proctor, who holds that the junior college must first of all relieve congestion in the state institutions of higher learning and thereby make the first two years of work more efficient:

The great expansion in the size of the student bodies in the colleges and universities of the country, gorging them beyond any possibility of successful instruction, has compelled the creation of the junior college. The large student mortality in the freshman and sophomore years of the great universities has been mortifying and humiliating to thousands of our youth.

III. HOW IS THE JUNIOR COLLEGE CONTROLLED?

Authority for the establishment of junior colleges is differently placed in the several states having legal provisions in the matter.

California, being the leader in junior college operation, as previously pointed out, first makes the blanket provision that junior colleges may be established as part of the secondary school system of the state.

But California also requires a local election initiated by a petition signed by 500 voters and a majority of the high school board. Local elections are required also in Kansas, Iowa, and Minnesota before the local board can act. But in Michigan the board of education in any district may establish a junior college course without appeal to the electorate.

The concurrence of a constituted state authority is required in four states. In Illinois, Missouri, and Iowa, this authority is the state superintendent of schools. In Pennsylvania, the State Council on Education approves any lease of property for collegiate education, and this enables any local board of school directors to offer a part of the school building and equipment to any university or college of the state for the organization of courses beyond the secondary level. Special laws have established branches of the state universities of Idaho and of Tennessee, in the latter case the requirement being that white students only shall be enrolled. In Colorado the law of 1925 authorized the improvement of donated sites for junior colleges at Trinidad and Grand Junction.

Five varieties of administrative unit are provided for in the California law. These are: (1) the junior col-

lege district; (2) the union junior college district; (3) the joint union junior college district; (4) the county junior college district; and (5) the joint county junior college district. As the titles imply, these types of units make possible the inclusion of different areas and the adoption of varying policies of consolidation in accord with the widely diverse geographic and population situations in the state.

As in the case of authorization, matters of organization and control of the junior college are distributed between state and local authorities. A population basis is given in two states. In Michigan, the school district must have at least 25,000 people before a junior college is organized. In Minnesota the minimum is placed at 50,000. A background in high school attendance of at least 400 is necessary in California, but this is placed at 100 in Arizona. In California, a petition signed by a majority of family heads or electors or an act of the county board of supervisors is required for the annexation or exclusion of a high school in a junior college district. The junior college may be discontinued in Arizona in accord with the judgment of the district school board. But in California, if the average daily attendance falls below 75 any year after the second, the local superintendent of schools is *required to suspend the junior college*. Control of administration and operation, including the prescription of courses, is given to the state superintendent of public instruction in Missouri and in Iowa, and to the Chancellor of the University of Montana in that state. The trustees of the University of Tennessee operate, manage, and control their branch, the Tennessee Junior College located at Martin, Tennessee.

The local district board in California becomes the junior college board, if district boundaries are the same. It is a continuous body of five members. It regulates

the course of study (60 semester hours) and other requirements for graduation.

The state board of education approves all curriculums in California and Michigan and prescribes courses in Kansas and Iowa. In Minnesota and Michigan, the state board has general authority over public junior colleges; and in Kansas it inspects and approves private schools. In Oklahoma, the general provision that the state board may approve colleges and universities is extended to junior colleges.

In California, the state board prescribes the details of attendance records in the public junior colleges as a basis for state aid. An annual report is required from the principal, made under oath, and before receiving the last month's salary. This must include total enrollment, average daily attendance, number of teachers, new students, and tuition students. The local superintendent of schools makes a report under similar requirements including data on total enrollment, average daily attendance, number of teachers, and other items found on blanks sent from the office of the state superintendent.

Criteria Offered For the Control

In California, relations with the state university are provided for. Affiliation is voluntary on the part of the local junior college and may include visitation, inspection, and accrediting. If credit for junior college courses is to be given, the qualifications of teachers are prescribed and other matters may be included also. The aim is to have the outside school offer work fully equivalent in quality and amount to that given in the freshman and sophomore years of the state university.

It would be a worth while undertaking to tabulate the details of proposals of the establishment and mainten-

ance of the junior college which have appeared in many states as bills introduced in the legislature but not passed.

Outside of the concrete proposals of standardizing agencies and legislative bodies on what the junior college should be, a number of rather detailed studies have appeared which offer criteria for the establishment and control of this new educational unit.

More Equipment And Higher Salaries

The first of these was made by McDowell¹ for the United States Bureau of Education in 1917. He found at that time but 39 public junior colleges. His recommendation was that "any institution attempting to offer the first two years of college work" should require fifteen units of high school work for admission, 60 semester hours of college work for graduation, a library of at least 2,000 college books, laboratories with equipment costing at least \$1,500 for each science taught, at least five heads of departments in the faculty, and all instructors with at least one year of graduate work beyond the bachelor's degree.

Two other important nation-wide investigations are those of Koos,² giving the figures for 1924, and of Whitney³ completed last June. This last survey makes the following recommendations as to what a public junior college should be:

1. An extension of the public school system in a local school district offering two years of college work beyond the twelfth grade

¹McDowell, F. M. *The Junior College*. Bulletin No. 35. United States Bureau of Education, Washington, D. C. 1919.

²Koos, L. V. *The Junior College*, Vol. I and II. Educational Series, Number 5, University of Minnesota, Minneapolis, May, 1924.

³Whitney, F. L. *The Junior College in America*. Colorado State Teachers College, Education Series, No. 5. Greeley, Colorado.

2. Authorized by the electors of the district by a two-thirds vote at a special election called on petition by 500 or more qualified voters
3. A district population of at least 10,000
4. An assessed valuation of at least \$10,000,000
5. The lower schools, that is, the public schools from the kindergarten including grade twelve, on a high level of efficiency, as compared with those of other similar communities, in respect to curriculum, pupil achievement, teachers' salaries, unit costs, and financial support
6. An average daily attendance in the local high school of at least 400
7. At least 125 graduates from the local high school each year
8. At least 15 per cent of the high school enrollment and 50 per cent of the high school graduates now attending college or university
9. At least five other four-year high schools with 450 enrollment within a radius of twenty miles
10. An annual income of at least \$20,000
11. A separate junior college building
12. Laboratories costing from \$1,000 to \$3,000 for each science taught
13. A library of at least 2,500 volumes with an annual book stock budget of at least \$500
14. An enrollment of at least 150 college students
15. The same entrance requirements as at the state university

16. A curriculum maintaining standards equivalent to that in the first two years at the state university
17. At least five instructors for each 100 students, each with a master's degree
18. Salaries larger than the high school salaries
19. Each instructor teaching his specialty and working fewer hours per week than the high school teachers
20. Not more than 30 students in any class
21. A minimum of 96 quarter hours necessary for graduation

IV. WHEN DOES A STATE NEED JUNIOR COLLEGES?

As previously pointed out, junior colleges are justified under certain conditions. First and most important of such conditions is necessarily need. It would be well then for any state in considering the establishment of junior colleges to determine whether the state is actually in need of this proposed added unit to the educational system, and to examine the facts tending to create or influence the need.

CONDITIONS OF NEED

In the light of information furnished in the foregoing pages, one is bound to conclude that high school education should not be extended to include the junior college, the thirteenth and fourteenth grades:

1. UNLESS existing junior college opportunities in state and private colleges and universities (the freshman and sophomore years) already organized are inadequate because of overcrowded freshman and sophomore enrollment
2. UNLESS state higher education in the already existing institutions of higher learning has reached the highest level of development and efficiency attainable and desirable
3. UNLESS there is a general demand from patrons of higher education throughout the state that existent junior college opportunities be expanded to include a state system of junior college education
4. UNLESS there is adequate detailed knowledge and understanding among all state social, political, and educational leaders, and all taxpayers of

what a state system of public junior colleges involves as an integral part of state higher education

5. UNLESS existent educational opportunities and educational efficiency in the lower schools of the state, the elementary and high schools, both city and rural, have been developed to a desirable and needed level comparable with that in the public schools of other states
6. UNLESS there be no pressing state enterprises involving money expenditure which must be taken up first
7. UNLESS the population of a district in which a junior college is established is sufficient to warrant an adequate enrollment of junior college students

Attendance Comparisons

In the light of the foregoing bases for the establishment of junior colleges, attendance statistics gathered from institutions of higher learning, both public and private, over a wide number of states present conditions which should command careful consideration by any group of citizens of any commonwealth considering the wisdom of extending high school education to include the thirteenth and fourteenth grades.

In the University of California the size of classes in the junior years of these higher institutions often is 600, 700, and sometimes more students. The average sized class in both public and private higher institutions in Colorado is but 25 students.

There is every reason to believe that the general understanding of what a state system of junior colleges involved is not clear. The movement is new, and has reached a state of efficient administration in but one

state, California. But, if legislators and taxpayers have all of the facts from California, they cannot assume that a similar system will positively fit any other state. The economic and social status and public school and university conditions are always quite different.

Much more public money must be used before our existing high schools and elementary schools in Colorado are as good as in other states which lead in educational matters and which have developed a large number of junior colleges. This is true in particular of our rural schools, both secondary and elementary.

According to the *Twenty-Fifth Biennial Report of the State Superintendent of Public Instruction for Colorado* (1925-26), only about 11 per cent of Colorado's high school pupils are graduated, while in 82 high schools in other states, 18 per cent are graduated. The same report also shows that salaries in Colorado are much lower, and no doubt here is one cause and its effect. Highly efficient high school teachers cost more; but they are worth more.

Colorado's city high schools are almost as efficient as most city public school systems in keeping pupils progressing normally as they grow older, but our rural high schools have nearly three times the proportion of over age pupils that is found in six other states. Colorado's attempt to give high school education to her rural pupils can stand considerable more attention.

Notice in Table I the rank of Colorado in school income, expenditure, and salaries. We are not very close to the top (rank 1) in any of the first four items and are lowest in teachers' salaries paid. And, no doubt, this explains in part the fact that we have an average position only in state illiteracy. Much can be done here also.

Notice, finally, in Table II that in five important measures of the type of public education provided in elementary and high schools, while Colorado is very close to the national averages, we are far below the high standards set by California. Item 5, for example, shows

TABLE I

THE RANK OF COLORADO AMONG 48 STATES IN FIVE ITEMS OF PUBLIC SCHOOL EFFICIENCY, 1925-26

Item	Colorado
1. Rank in current school income per child (a)	17
2. Rank in total amount expended per child (b)	12
3. Rank in average salaries paid (b)	22
4. Rank in cost excluding salaries (b)	14
5. Rank in per cent of illiteracy (c)	27
Average rank	18

- a. Norton J. K. *The Ability of the States to Support Education*. Research Bulletin Nos. 1 and 2, Vol. IV. National Education Association, Washington, D. C., 1926.
 b. *Supplement to American School Board Journal*, December, 1924.
 c. *United States Census Reports*, 1920.

TABLE II

A COMPARISON OF FIVE ITEMS OF PUBLIC SCHOOL EFFICIENCY IN CALIFORNIA AND IN COLORADO (a)

State and national averages	United States	California	Colorado
1	2	3	4
1. Value of school property per pupil enrolled	\$ 173	\$ 266	\$ 198
2. Length of school term	170	182	178
3. Number of days of pupil attendance	137	126	135
4. Salaries school faculty	1252	1854	1296
5. Number of years children attend school	6.92	7.42	6.89

- a. Norton, J. K. *The Advance of the American School System*. Research Bulletin No. 4, Vol. V. National Education Association, September, 1927.

that our present school system is less than a seventh grade system, if the actual length of schooling of the average pupil is considered. Ought we not to give the average Colorado pupil at least some high school education before offering free local college education to a very few high school graduates?

No state is justified in adding to the budget for local higher education until the lower schools are raised to a better comparative level of efficiency than is shown above. And this present need is most pressing in Colorado's rural schools.

Leaving out Denver, the fact is that in Colorado districts having no four-year collegiate schools now, there would probably be difficulty in getting together enough junior college students to warrant the organization of efficient junior colleges. *In a junior college, as in a high school, the smaller the school the higher the unit cost, and there is a minimum enrollment below which an efficient organization is not possible.* Authorities in this field have placed this figure at 200 students, or possibly as low as 150.

Dr. Koos¹ says:

That no board of education should undertake an extension of a secondary school to include two more years at the top unless there is a proper background of population in a community and unless a student enrollment of at least 200 is assured.

The probable size of junior college groups available in five representative Colorado districts is shown in Table III. Boulder and Greeley, of course, already have large state institutions of collegiate rank, but columns 2 and 7 say that they do not enroll in freshman and sophomore classes even all available junior college students.

¹Koos, L. V. *The Junior College*. Vols. 1 and 2, Education Series No. 5, University of Minnesota, May, 1924.

TABLE III

POSSIBLE NUMBER OF JUNIOR COLLEGE STUDENTS AVAILABLE IN FIVE COLORADO DISTRICTS AND ACTUAL PRESENT JUNIOR COLLEGE ATTENDANCE, 1927-28

District	Local graduates	Graduates within twenty miles	Total graduates in junior college area (two years)	Per cent of graduates attending junior college	Probable available junior college group	Actual present junior college attendance from local high school
1	2	3	4	5	6	7
1. Boulder	318	218	536	92	493	291
2. Greeley	283	296	579	68	394	193
3. Grand Junction	200	129	329	37	122	74
4. Trinidad	206	216	422	41	173	84
5. Sterling	182	173	355	17	60	31

Smaller the College Greater the Cost

Very small local junior colleges are too costly and have to be relatively inefficient in administration and in teaching results. Every local situation ought to be checked carefully with this in mind before a state system of local junior colleges is decided upon.

There is already provision for free junior college work in Colorado's six state four-year collegiate schools. Junior college work is offered also in four private four-year colleges and in three private junior colleges.

Colorado enrolls proportionately as many junior college students *now* as neighboring states do.

Before any state makes provision for an extension of the public high school system to include two additional years beyond the twelfth grade, an intensive survey should be made of conditions and possibilities in public education in other similar states so that state leaders

V. WHAT DOES THE JUNIOR COLLEGE COST?

After an examination of all the facts bearing on the definition of a junior college, how the same is controlled, and the needs of a commonwealth for junior colleges, the citizen should then examine carefully into the costs of maintaining and operating such institutions. It is the aim here to give him some figures which will enable him to determine for himself whether he can afford to adopt this educational unit as an integral part of the public school system. In short, what will it cost to extend local common school education beyond the high school to include grades thirteen and fourteen?

At the present time, the levy from the general assessment of the state of Colorado for all purposes is 3.84 mills, and 1.59 mills out of this is for higher education, that is for our state colleges and the university and state experiment stations (Table IV). This is but 4 cents (3.8 cents) out of your state tax dollar for higher education. And while there is much complaint over what may seem to be a large expenditure for higher educational purposes, every effort is made to keep the levy as low as possible consistent with the actual needs of this most important phase of government.

The tax levy for higher educational purposes, made for the general state fund, is the same throughout the state and amounts to 1.59 mills. This supports ten budgets for state higher education (University of Colorado, Colorado Agricultural College, Colorado Agricultural College Experiment Station, Fort Lewis School, State School of Mines, Mines Experiment Station, Colorado State Teachers College, Western State College, State

TABLE IV

AVERAGE TOTAL AND SCHOOL MILL TAX LEVIES FOR THE STATE OF COLORADO, 1927

Item	State Average (mills)	
	Total	School
1	2	3
1. State	3.84	1.59 (a)
2. County	8.58	
3. Town	15.97	
4. School	13.77	13.77
Total	42.16 (b)	15.36
School (Item 4)		32.6 per cent
State higher education (Item 1)		3.8 per cent

- a. Ten budgets for higher education.
- b. This table does not give a complete statement of average tax burdens. The equivalent of large millages are paid as gasoline taxes and for auto licenses. Fines and poll taxes are not included, nor special municipal taxes. If these could be put into the totals, the school taxes would be much smaller proportions.

University Medical School, and Adams State Normal School). In addition to this, however, there is a levy in the individual counties for the general county education fund and a levy for the separate school district fund. These county funds vary, but the average for all counties of the state is 13.77 mills.

Local Taxes Will Be Greatly Increased

Three and eight-tenths cents out of every tax dollar goes to the state for the purpose of higher education. With the county levies added, 36.4 cents out of every

dollar goes for all educational purposes, both state and local.

It is inevitable that, if the local school districts should add two more years to the system, the cost must increase.

In his study under the direction of the Commonwealth Fund of New York, Dr. Koos made estimates of the probable increase in local tax rates in 58 cities of different sizes in two states. The study shows that in the case of the smallest cities the establishment of the public junior college of 200 students would very probably increase the mill levy from about 25 per cent to 50 per cent¹.

Finance Burden on Local Taxpayer

Granted that a state saw fit to provide for the establishment of junior colleges, the small sum which generally is provided in junior college enacting laws for each and every pupil enrolled in said junior colleges would be only a "drop in the bucket." This would be the smallest part of the expense, and the bulk of the burden would of necessity fall on the taxpayers of the local school districts.

Several additional items of cost must be provided for—

FIRST—*Additional school buildings.* It is right to suppose that every public school building is used to the limit of its hour capacity to carry on the work of the existing elementary and secondary school program—a program which educational authorities say is not up to the highest standard in Colorado. It would seem then that, if the local school districts are to add two more grades, they must erect more buildings.

¹Koos, L. V. *The Junior College.* Vols. 1 and 2, Educational Series No. 5, University of Minnesota, Minneapolis, May, 1924.

SECOND—*Instructors*. Not only is the teaching force in all of the public school systems carrying a capacity load, but advanced courses such as are proposed for junior colleges demand instructors of higher professional standing. This means, not only additional salaries, but salaries larger than those paid the high school teachers. Further, the instruction costs in a junior college always constitute 75 per cent to 80 per cent of total cost.

THIRD—*The cost of educating pupils* in the thirteenth and fourteenth grades, the grades of the junior college, runs from \$200 minimum to \$400 for schools with an enrollment of as few as 150 students.

Dr. F. W. Reeves, prominent in the field of education and educational research, who has written extensively on public school costs, in an article in the *North Central Association Quarterly*, December, 1927, says:

“An effective Junior College of 250 or more students should expect to have a cost of approximately \$340 per student. If the enrollment drops to 200, it should be expected that the cost would rise to \$375, and if to 150 it might rise to \$400 per student.”

State Support Would Be Relatively Small

The finance background of twelve Colorado districts with assessed valuation of over \$5,000,000 is given in Table V. Columns 5 and 6 give total school receipts and amounts coming from state funds. Table VI shows the proportion that present state aid for the lower schools is of total local expenditures, and estimates what districts with different populations would receive from the state per junior college student, if state subsidy on the same level were extended to college support (column 3).

TABLE V

FINANCE FACTS HAVING DIRECT BEARING UPON THE FEASIBILITY OF THE ORGANIZATION OF JUNIOR COLLEGES IN ELEVEN COLORADO CITIES, 1928 (a)

City (County)	Population	School tax levy (mills)	Assessed valuation	Total re- ceipts for school purposes	Amount re- ceived from the state (b)
1	2	3	4	5	6
1. Denver (Denver)	300,000	13.80	\$435,127,085	\$6,376,618	\$176,513
2. Colorado Springs (El Paso)	36,000	18.38	45,381,360	774,453	18,960
3. Pueblo Dist. 1 Dist. 20 (Pueblo)	50,000	14.90 14.46	23,431,305 33,040,069	499,483 633,333	17,194 23,510
4. Ft. Collins (Larimer)	14,000	16.38	16,868,790	300,789	7,576
5. Greeley (Weld)	13,000	15.40	16,488,960	289,070	10,325
6. Boulder (Boulder)	12,500	17.50	14,210,435	312,396	6,909
7. Grand Junction (Mesa)	12,500	11.40	11,517,310	173,270	13,721
8. Trinidad (Las Animas)	13,000	15.60	10,947,726	251,644	15,769
9. Long- mont (Boulder)	7,000	10.40	10,759,672	178,131	5,191
10. Sterling (Logan)	7,500	9.88	9,554,730	121,569	11,729
11. La Junta (Otero)	5,500	15.90	7,534,453	150,000	5,732

a. Bradford, Mary C. C. *Twenty-fifth Biennial Report of the State Superintendent of Public Instruction, State of Colorado, Denver, 1927.*

b. This does not include the county bonus of \$75 for teachers' salaries.

TABLE VI

PROBABLE AMOUNT TO BE RECEIVED FROM THE STATE PER JUNIOR COLLEGE STUDENT, IF THE STATE AIDS THE LOCAL DISTRICT TO MAINTAIN A JUNIOR COLLEGE AT THE SAME RATE THAT THE LOWER SCHOOLS ARE AIDED, ASSUMING THE TOTAL ANNUAL STUDENT UNIT COST IN THE JUNIOR COLLEGE TO BE \$200

Systems	Per cent state aid is of total school revenue	Student unit receipt, if the junior college is aided the same as are the lower schools
1	2	3
I. Michigan (a)		
1. 7,000 to 10,000	16.9	\$33.80
2. 10,000 to 20,000	16.1	32.20
3. 30,000 to 100,000	13.4	26.80
II. Minnesota (a)		
1. 5,000 to 10,000	11.2	22.40
2. 10,000 to 20,000	9.1	18.20
III. Colorado		
1. Boulder (12,500)	2.3	4.60
2. Colorado Springs (36,000)	2.5	5.00
3. Denver (300,000)	2.8	5.60
4. Fort Collins (14,000)	2.1	4.20
5. Grand Junction (12,500)	7.9	15.80
6. Greeley (13,000)	3.6	7.20
7. La Junta (5,500)	3.8	7.60
8. Longmont (7,000)	2.9	5.80
9. Pueblo (50,000)		
Number 20	3.7	7.40
Number 1	3.4	6.80
10. Sterling (7,500)	9.6	19.20
11. Trinidad (13,000)	6.2	12.40
Approximate Average		
Michigan	16.0	\$32.00
Minnesota	10.0	20.00
Colorado	3.5	7.00

a. Koos, L. V. *The Junior College*, Vols. I and II. Education Series No. 5. University of Minnesota, Minneapolis, May, 1924.

It is seen that in Michigan and Minnesota this amounts to but about 10 to 16 per cent, and assuming a junior college student unit cost of \$200, this would bring to local districts but about \$20 to \$30 per student. In Colorado, school support is preponderantly local, only about 3.5 per cent coming from state funds and never more than 10 per cent in the eleven districts in which there would be any likelihood at all of the organization of junior college units. This would yield not over \$20 per junior college student, and might be but \$4 and \$5.

But, of course, the desire and expectation in any locality always is that state aid will be increased when a special additional need develops, such as would be presented by the establishment of thirteenth and fourteenth grade extensions of high school education. And this expectation is perhaps reasonable. The figures of Tables V and VI simply show differences in generosity attitudes in three states in the matter of state aid for the lower schools, the guess being that a hint may be derived therefrom on size of state subsidies for education above the lower schools in these states. The fact is that, so far as Colorado is concerned, the figures show that the policy of the state in maintaining and improving the lower schools is not what it is in Michigan and Minnesota.

Heaviest Cost in Freshman Year

In the state of California, the junior college laws of 1917, 1921, and 1927 provide \$2,000 annually for each junior college district and \$100 for each student in average daily attendance the previous year. The local district must furnish an equal amount, and use state money for teachers' salaries alone.

Both the population and the valuation of a community or proposed junior college district must necessarily play a very important part in the cost of operating a junior college. And the smaller the community the greater the tax burden. In this connection, it is significant that those communities in Colorado that can best afford junior colleges now have junior colleges, universities, and institutions of collegiate rank; for example, Boulder, with the University of Colorado; Denver, with Denver University and Colorado Woman's College; Fort Collins, with the State Agricultural College; Golden, with the Colorado School of Mines; Greeley, with Colorado State Teachers College; Gunnison, with Western State College; Colorado Springs, with Colorado College.

It is a well known fact that the student enrollment in four year colleges and universities is heavier in the freshman and sophomore years than in the last two years, and one would expect unit costs to be lower there. This is found to be true in Yale University¹ where the cost in the freshman year is three-fourths of the average yearly cost per student for all four years. In the University of Washington,² freshman and sophomore courses cost over three-fourths as much as the average yearly four year costs.

It may be, then, that a fairer estimate of probable local junior college costs would be from the analogy of lower division four-year higher institution figures. But, even on this level, it would not very probably fall below \$200 per student; and, as a median is but a central tendency in a distribution of a total array of figures, one might expect the best organization of junior college opportunities to cost more than \$200 per student rather than less.

¹Treasurer's Report. Yale University, New Haven, Connecticut, 1922-23.

²Stevens, E. B. and Elliot, E. C. *Unit costs in Higher Education*, p. 171. The Macmillan Company, New York, 1925.

In some institutions, high school education does not cost much above \$100 per pupil in attendance, but as this figure in any high school very probably increases throughout the four years offered and is largest in the senior year no doubt costs in the thirteenth and fourteenth years (the junior college) would be much larger than this. Furthermore, whenever junior college work is offered, it should be an extension of the best type of secondary curriculum in a community capable of supporting it adequately. High schools in such communities do not cost much less than \$200 per pupil (\$175. in Colorado¹ and \$194 in Arizona²), and it may be expected that junior college offerings will cost more.

Evidence on trend of cost increases through successive units of the school system is, perhaps, not very good reasoning; but it is interesting, may throw some light on future facts, and may emphasize a viewpoint which any community is used to and is ready to admit. For it is customary to have high school costs larger than those in the elementary school, whether they should be or not; and it ought not to be hard to establish the validity of a prediction that further extension of public school offerings will cost still more. For example, Uhl³ estimates that high school costs are on the average 2.67 times more than elementary school costs; and Swift says that "It costs approximately two and one-half times as much as to educate pupils attending high schools as pupils attending elementary schools."⁴ The Fifth Yearbook of the Department of Superintendence⁵ reports the ratio of cost per pupil in three adjacent educational units in cities of over

¹Bradford, Mary C. C. *Twenty-Fifth Biennial Report of the State Superintendent of Public Instruction*, Denver, Colorado, 1925-26.

²Judd, C. H. *The Management of High School Finances*. Seventh Yearbook, p. 31. National Association of Secondary School Principals, 1923.

³Uhl, W. L. *Principles of Secondary Education*. Silver Burdette and Company, Chicago, 1925.

⁴Swift, Fletcher H. *A Biennial Survey of Public School Finance in the United States, 1920-1922*. Bulletin No. 47. 1923. United States Bureau of Education, Washington, D. C., 1923.

⁵Broome, E. C. "Junior High School Costs," Chapter VI, pp. 65-66. *The Junior High School Curriculum*. Fifth Yearbook, Department of Superintendence, National Education Association, Washington, D. C., February, 1927.

100,000 population to be 100, 139, 178. In cities under 100,000 the trend is found to be 100, 144, 189. If, with the elementary school situation as the base, junior high school unit costs are found to be 39 and 44 per cent larger and those for the senior high school 78 and 89 per cent larger, it would not be unreasonable to predict that junior college costs would be at least 117 and 133 per cent larger than those in the elementary school. If the figure for high school unit costs of \$175 as given above be inserted into these series, estimated junior college costs are found to be about \$204 and \$230.

High School Most Expensive of Units

It appears, then, that the high school is the most expensive administrative unit of the present local school system, that its pupil costs may rise in the best managed situations to between \$150 and \$175, and that it would not be unreasonable to predict that its extension, the junior college, would necessitate student expenditures of close to \$250 per student per year.

But a number of reports are available on actual unit costs as found in public junior colleges already organized and in operation. In his Commonwealth Fund study¹, Koos found the cost of instruction in fifteen junior colleges as reported in Table VII. It is significant to change these teaching costs to approximate total cost figures on the assumption that they constituted but 75 to 80 per cent of the total. This makes the range of total costs from about \$100 to close to \$300, and the approximate median in the smallest colleges over \$200.

¹Koos, L. V. *The Junior College, Op. cit.*

TABLE VII

COST OF INSTRUCTION PER STUDENT IN FIFTEEN JUNIOR COLLEGES AS RELATED TO SIZE OF STUDENT BODY (a)

Enrollment	Number of colleges	Median cost of instruction	Total cost (b)
1	2	3	4
1. Fewer than 100 students	9	\$169	\$211
2. One hundred to 200 students	5	108	135
3. Over 200 students	1	117	146
Total range		\$83—\$224	\$104—\$280

- a. Koos, L. V. *The Junior College*, Vols. I and II. Education Series No. 5. University of Minnesota, Minneapolis, May, 1924.
- b. This is on the assumption that teaching costs are 80 per cent of total costs. Column 4 is not taken from Koos.

More Expensive Than High Schools

It is safe to estimate then, that student costs in rather small junior colleges would turn out to be larger than unit costs in the high schools in the same districts and would hover around \$200 per student as an average. In fact, a very recent junior college survey in Indiana¹ estimates that:

1. A good standard junior college of 250 students must cost \$300 per capita
2. A good small junior college of 100 students must cost \$500 per capita

¹Foster, I. O. *Some Phases of the Junior College Movement*. Indiana University, Bloomington, Indiana, 1928.

3. A poor junior college of 200 students must cost \$200 per capita
4. An unsatisfactory junior college of 60 students must cost \$135 per capita

Actual total and unit costs in 38 junior colleges are reported in Table VIII. These are very useful, if any taxpayer wants to know exactly what this proposed junior college really costs in other states. Notice that the expenditure per student is never much below \$100 and rises to nearly \$500, with an average of over \$200 for an average junior college enrollment of nearly 300 students. Furthermore, a little arithmetic shows that on the whole as the size of student body increases the total cost increases also, even though cost per student be lowered by increase of enrollment. In fact, a little more figuring tells us that at least three-fourths of everything about a junior college which makes it cost anything is found in the fact of size of enrollment.

One of the important first things to do then, if any local district is actually considering the organization of a junior college, is to be sure that a sufficient number of students will attend. If the junior college has to be too small, it will not only cost too much but will be hard to make efficient educationally.

Would Cost from \$200 To \$250 For Each Student

The foregoing figures show any interested taxpayer that when local and state school taxes are taken together only about 10 per cent of the total goes to state higher education (1.59 mills out of 15.36 mills), that all school taxes amount to practically one-third of the tax dollar (36.4 per cent) and the proportion would be much less

TABLE VIII

REPORTED COST PER STUDENT ON THE BASIS OF TOTAL ENROLLMENT
IN 38 AMERICAN JUNIOR COLLEGES, 1927 (a)

Enrollment	Total Cost	Cost per Student
1	2	3
135	\$ 63,689.77	\$471.78
160	65,299.50	400.61
163	71,823.36	440.63
163	66,820.08	417.62
254	82,826.31	326.09
57	18,500.00	324.56
328	100,208.57	305.51
116	33,974.51	292.88
600	169,476.76	282.46
363	97,914.38	269.74
28	7,436.80	265.60
383	101,200.00	264.23
285	69,223.30	242.89
171	39,260.00	229.59
634	142,756.27	225.17
94	20,831.00	221.60
479	104,475.30	218.11
229	48,960.55	212.80
100	21,000.00	210.00
152	31,730.00	208.75
213	43,559.96	204.51
83	16,600.00	200.00
132	26,223.06	198.66
250	44,593.62	178.37
49	8,300.00	169.38
159	25,700.00	161.64
762	120,072.22	157.57
385	55,444.00	144.01
1425	202,221.28	141.91
366	51,909.94	141.83
1143	162,000.00	141.73
267	37,163.41	139.19
113	15,000.00	132.74
115	14,192.93	123.42
237	29,194.79	123.18
260	28,334.00	108.98
144	13,742.02	95.43
174	16,375.92	94.11
Average 293.9	\$ 59,685.09	\$223.37
Range 28-1425	\$7,436.80- \$202,221.08	\$94.11-\$471.78

a. Clark, H. F. "Junior College Costs." *The Normal Advance*, Vol. XXXV, Terre Haute, Indiana (April, 1928).

if a complete statement of all taxes could be had, that an increase in taxes for education with junior colleges added will very probably cut the tax dollar in two with a larger part (54.6 per cent) for education. This represents an impossible situation. An increase in taxes of even 5 per cent or 6 per cent is not to be considered, unless it is absolutely necessary.

Further, it is shown that the student unit cost in junior colleges is sure to be two or three times what it is in the high schools, and very probably will be as high as \$200 or \$250 per student.

Finally, it is shown that, in 38 junior colleges already operating, the actual cost per student is an average of over \$200 and rises as high as \$472.

VI. CONCLUSION

In the light of the foregoing information, the people of any community will not wisely extend high school education to include the junior college—the thirteenth and fourteenth grades:

- I. UNLESS local community conditions are right as shown by
 1. A long standing favorable attitude among public leaders toward adequate support of public enterprises
 - a. The city government has been for many years spending adequate sums for city hall, auditorium, parks, sewers, streets, etc.
 - b. The local school district has been for many years progressive in expenditures for new buildings and grounds, equipment and apparatus, teachers' salaries and retirement funds, etc.
- II. UNLESS there is a favorable attitude toward higher education
- III. UNLESS it seems to be possible to put over the correct idea of what *college work* really is, what its objective should be, what it really should do—this in contrast to a general attitude that a junior college is a good thing because a rival town has one, because it will provide just two years more of free public education, etc.

- IV. UNLESS there is no college work, public or private, in the community or in the immediate vicinity (within 25 to 100 miles)
- V. UNLESS there is an adequate school census as a background for junior college enrollment
- VI. UNLESS there is an adequate high school enrollment as a background for junior college enrollment
- VII. UNLESS there are enough high school graduates to insure a proper junior college enrollment
- VIII. UNLESS there is sufficient building room for a junior college without the provision of a new building
- IX. UNLESS a junior college organization is feasible *now* as shown by local attitudes and conditions
 - 1. Local sentiment and desires, as expressed by influential groups and probably agreed to by the majority of tax payers, is in favor of college education
 - 2. A general understanding of what a local junior college would mean in terms of curriculum, cost, etc.
 - 3. City and school finances in condition so that additional expenditure may be undertaken for a local junior college without undue burden to present tax payers or over bonding
 - 4. No municipal or school enterprise more important and insistent before the public so that all interest and public effort can be concen-

trated on the establishment of a local junior college

5. An adequate number of junior college students available from local and neighboring high schools

X. UNLESS community finances are ready, as shown by

1. An attitude of independence of state aid in local enterprises
2. An adequate background of assessed valuation
3. Present size of senior high school salaries
4. Value of school property (per pupil enrolled)
5. Present bonded debt
6. School tax levy
7. Actual total cost of the public schools
8. Total public school budget
9. Average pupil cost per year
10. Probable cost of the junior college per student
11. Probable cost of junior college instruction per teacher
12. Additional housing equipment, etc.
13. Probable smaller class size in the junior college
14. Probable lighter teaching load in the junior college

XI. UNLESS local educational opportunities are adequate in the light of local needs, as shown by

1. Well organized and supported pre-school and kindergarten education
2. Well organized and adequately supported elementary and high school education (grades one to twelve inclusive) conducted on a level of efficiency comparable with that found in other American communities with similar social and economic conditions
3. Well organized and supported adult education
4. Well organized and supported continuation and part time education

