Iowa Public Junior College

M. A. Love

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The Iowa Public Junior College: Its Academic, Social, and Vocational Effectiveness

by

MALCOLM A. LOVE, PH.D.

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University of Iowa Studies in Education

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The Iowa Public Junior College: Its Academic, Social, and Vocational Effectiveness

by

MALCOLM A. LOVE, PH.D.

The main content of a dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, in the College of Education, in the Graduate College of the State University of Iowa

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CHAPTER I

INTRODUCTION

The public junior college in the United States during the past third of a century has seen a growth somewhat similar to that of the high school in its earlier stages. The development of the American high school was slow. Three hundred twenty-one high schools were founded during the thirty-nine years from 1821 to 1860. In the thirty-five years since the first public junior college was established in 1902 at Joliet, Illinois, 229 institutions of that type have come into existence. This is not to say that the junior colleges will continue to increase in numbers as the high school has done, for free education at this level could be provided by fewer institutions than are required at the high school level if the junior college districts were made sufficiently large. This newest of our educational institutions now has a fairly firm foundation and there is little expectation that it will diminish in importance. It is assured a place in the permanent structure of American education, though there is still much controversy about what that place shall be.

When the high school came into being, it conflicted with the private academies. There ensued a long struggle for free education at the secondary level, and certainly there was little expectation, even fifty years ago, that this institution would hold the dominant place that it does today.

A question prominent in the minds of leaders in the field of education is whether or not the junior college is to be open and free to all, as is the public high school. Stated in another way, is the period of free education to be extended upward two more years? This question is not new, as has been indicated by Koos (30, p. 624) who writes:

> Logic seems to point toward providing junior college education, which is essentially secondary in character, free of tuition to the student.

Discussing the same question Eells (14, p. 537) says:

> The only procedure logically possible in a country which has adopted the general principle of free public education, at least through the period of general education prior to specialization, is to make junior college education completely free, as in California.

To an increasing extent municipalities and state governments are developing institutions of higher learning supported largely from public funds. The necessity of establishing and maintaining tax-supported colleges and universities is becoming more and more generally recognized. This attitude does not indicate unfriendliness toward private enterprise in the field of higher education; instead it is a recognition of the ever growing demand for advanced training by groups of young men and women who cannot bear the expense of leaving the home community to obtain this education.

The question has become more acute because of the stress of economic circumstances and the spread of unemployment. Solutions to the problem of unemployment involve the narrowing of the period of productive labor by shortening it at both ends. Plans for the retirement of individuals at sixty or sixty-five with adequate old age pensions have been moving forward at a rapid pace. The question of caring for youth up to the age of twenty-one has been under consideration. The greatest menace which confronts modern societies comes from unemployed young people left to themselves without any educational supervision. As I. E. Kandel (27, p. 12) has expressed it:

> The time is inevitably coming in most parts of the world, and particularly in those which are most advanced industrially, when the dangers of technological unemployment will compel society to retain all adolescents under some sort of educational supervision, and when what has hitherto been a privilege, even in such a country as this, will become a duty, and education at the secondary level will become compulsory.

While the discussion in this chapter is largely concerned with the problem of popular education beyond the secondary level, it must be remembered that in the education of leaders, a democracy must make provision for bringing together the best minds and the best educational facilities, much as is done in England.

Those who can best profit by each type of education must be determined and ample opportunity provided. The problem of determining the type of education an individual should receive can be solved only when the principle of selection becomes tenable in a democratic society. At the present time the most able receive little more than the least able.

If the opportunity for secondary education is extended upward two more years, the majority of this age group would probably be

served best by integrating general education. Some, it is true, would be served better by the type of education which could be provided by the training camp plan foreshadowed, at least, in the present Civilian Conservation Corps.

The Committee on the Orientation of Secondary Education (6, p. 113) has made a proposal along this line. They would go further than the present program of the Civilian Conservation Corps, however, and in addition they insist that such a program can be more effectively administered under the control of the state departments of education than as a function of the Federal government.

Other youth would be best served by institutions which would provide training in what Koos (30, p. 153) calls "semi-professions." Examples of these would be: commercial positions, including nearly all kinds of salesmanship, accounting, and secretarial work; many public service occupations; most of the so-called engineering occupations; the majority of agricultural pursuits; foremanship in industry; and many others. Eells summarizes the studies covering such occupations (14, p. 283 ff.).

In this general discussion of popular education beyond the secondary level, an appraisal of the situation in the State of Iowa will provide a concrete example of the problem as it exists in one state.

The Problem of Junior College Education in Iowa

For the present program of education beyond the high school level, Iowa is well supplied with institutions of learning. There are three state schools offering as much as four years of collegiate work, twenty private four-year colleges, ten private junior colleges, and twenty-seven public junior colleges. The total enrollment in the junior college years of these schools is approximately 14,000. According to the United States census for 1930, there is in the state a population of around 42,000 in each annual age group at the normal age of junior college attendance. This figure would indicate that, if all were to be educated during these years, Iowa would have to make provision for about 84,000 individuals. However, except under a system of compulsory education as suggested by Kandel, the provisions of public school facilities required will always be for a considerably smaller number than are included in the total population of school age. The reason this is true is because

the student mortality throughout the school system is relatively heavy.

In 1936, according to the report of the state superintendent of public instruction (42, p. 77), only 28,000 students were graduated from the high schools in Iowa. In addition, 1,780 boys and girls were graduated from the twelfth grade of the parochial schools in Iowa. The total is only 70 per cent of the number of individuals who are eighteen years of age. The number of high school graduates is about 10 per cent less than the number of students in the junior classes of the high schools. By assuming a 10 per cent decrease during each year above the high school level, one would arrive at approximately 48,000, which is the probable maximum number of students for whom education at this level would need to be provided under a system which is free but not compulsory. This would mean that the state should provide for 48,000 youths in the junior college years. It might then be concluded that at the present time approximately 28 per cent of the youth who are eligible for junior college education are provided for in the state of Iowa.

It is certain that if provision were to be made for the entire group, then junior colleges serving an area larger than that of a local school district would be needed.[1] At the present time, there are nearly enough institutions in the state, but their facilities are not adequate.

Though these figures are merely very rough estimates, they are adequate for the purpose of giving point to the present discussion. It is understood that the problem of caring for all of the 48,000 youths would not be facing the state at any early date, but the problem of caring for the margin of youth at present unemployed and the additional group who would be taken out of employment if opportunity for further additional education were open to them should be considered.

The junior college situation in Iowa should be judged in the light of the present trends in public education. The question of increased amounts of general education to larger and larger numbers of the youth of the land has been the subject of much thought on the

[1] The district junior college as organized in California has proved most successful and should be given careful study if any attempt is made to increase the size of the junior college district in Iowa. In California the district is independent of the local high school district and it is recognized that collegiate education is a function of the state.

part of leaders in the field during the past few years. As the doors of industry have closed to them, the problem of what to do with these groups of unoccupied youth has become acute. The National Department of Secondary School Principals under the leadership of Thomas R. Briggs (6, p. 112 ff.) concluded that there should be some provision made by the state to take care of youth of high school age according to their needs and abilities. President Robert M. Hutchins (23, p. 74) of the University of Chicago has approached the same problem at the junior college level in a similar attitude. He believes that all young men and women who have the capabilities should be given opportunity for two more years of general education:

> Our problem now is not to keep students out of educational institutions but to find or create those they can profitably go to. The most footless question that university presidents have been debating in recent years is, who should go to college? Where else is there to go? Today adults cannot get jobs. Boys and girls of college age can hope to find them only by accident. Because of the technological improvements of recent years industry will require in the future proportionately fewer workers than ever before. The great problem of the high school is not to hold pupils but to get rid of them. Their graduates cannot get work and demand that classes be provided for them by an overburdened staff in overcrowded buildings. The public junior colleges and the state universities in urban centers have been swamped by the tide that has swept over them since the depression began. If these students are forbidden to enter educational institutions, what will become of them? All of them cannot be absorbed into the army, navy, or Civilian Conservation Corps. We should not encourage them to try to get into jail. The answer is that we must expand the educational system to their eighteenth or even their twentieth year. If existing schools and colleges are not adapted to the needs of all these students (and they certainly are not), we must establish new ones for them. If existing methods of selection and instruction cannot be employed, we shall have to invent others.

If such provision is to be made in the country at large, it means that there will be, in all probability, many small institutions of junior college grade. The Iowa institutions are all small and if we approach the study of their effectiveness as we would the results of an experiment in this field, we should be able to draw conclusions which might prove to be of use in a program of action in line with the suggestions that have recently been made.

Such an attitude would sooner or later force us to face a number of vital questions. Of what size should an institution be for effective

service in the field of education at the junior college level? Can districts of the size of those found in Iowa be expected to support an adequate program of junior college education and at the same time not decrease the effectiveness of the elementary and high school program?

Can junior college teaching in small units be maintained on a standard high enough to prevent the work from becoming little more than two additional years in high school? Since it must be recognized at the outset that there cannot be extensive differentiation of curriculum offerings in small schools, can a single curriculum be developed which will satisfy the needs of those who should terminate their education at the conclusion of their junior college course, and at the same time meet the requirements of those who should continue their education to some higher level? Should the doors of the junior college be opened to all graduates of high schools in the state, or is the present standard, which is based on the economic ability of each individual (to the point, at least, that he can pay the tuition and support himself during the interval) be considered as satisfactory? Should there be selection from one level to another, i.e., from high school to junior college, and if so, on what basis should this selection be made? Should a system of parallel institutions be set up offering training for students who are not mentally or physically able to follow the general educational curriculum? What should be the training of the junior college staff? Can institutions such as the state universities be expected to accept graduates of these junior colleges as members of their junior classes, much as high school graduates are now accepted as members of their freshman classes?

The observations given in the following paragraphs indicate that the situation in Iowa affords an opportunity to answer, at least in part, some of the foregoing questions.

1. The size of the institutions in Iowa gives ample opportunity to judge the effectiveness of small junior colleges.

2. To date the junior college in Iowa has been carefully supervised by the Intercollegiate Standing Committee. This inspection period has been long enough to assure a substantial basis for future experimentation.

3. The staffs in the Iowa public junior colleges have met a relatively high standard of preparation even though salaries have not been commensurate with the standard. Present indications point to future improvement in this regard.

4. The State University of Iowa has been moving gradually to a system of two or more years of general education followed by two or more years of professional training or continued liberal education. This will permit the university and similar institutions to move easily to the acceptance of junior college graduates into the junior year.

5. If the junior college found it unnecessary to follow the exact form of the courses offered in the university, experimentation in a general education curriculum could proceed with attempts to build for the type of student best suited to general education. Such a program would demand two things: first, a teacher specially trained to teach the new curriculum; and second, supervision of a somewhat more intimate type than that given by the Intercollegiate Standing Committee. Selection by the senior colleges could then be exercised by aptitude examinations and high standards.

If the additional education considered in this discussion were made universal, it would have to be made free. If free, then students of low or special abilities as well as those capable of benefiting by this type of higher education would be applying for entrance. Additional state controlled agencies should then be set up to meet the needs of these individuals. Farming taught on farms, forestry in forests, metal work in shops, and many other types of activities should be provided by the state and controlled by it. If the educational agencies of the country must care for youth up to the age of manhood, then it is necessary to meet the diversified abilities and interests on some other basis than that of the local school district.

CHAPTER II

PROBLEM AND METHODS

In 1927 Blezek (4) made a study of the junior colleges in Iowa, his purpose being to determine their growth and development, their relationship with accrediting agencies, their control and legality, and to analyze the teaching staff and the curricula. In the same year (1927) a study dealing with the organization, equipment, curriculum and instruction of the public junior colleges in Iowa was made by a committee of the Educational Council of the Iowa State Teachers Association (51).

On the basis of questionnaires and examinations, Chandler (10), in 1928, found there were no significant differences between public junior college freshmen and freshmen at the University of Iowa with regard to such factors as: age, race, sex, religion, fathers' occupations, self-support, degree intention, occupational intention, and intelligence. Chandler administered the Iowa Comprehension Test, Iowa Placement Examinations in English and Mathematics, and the Iowa High School Content Examinations to 358 students in eleven Iowa public junior colleges. His results show a slight superiority of junior college freshmen over freshmen in the State University of Iowa, which is not statistically significant.

The Educational Council of the Iowa State Teachers Association (7) published in 1929 a bulletin on the development of group consciousness among junior college students. This bulletin included a consideration of the effects of such factors as the college organization, the faculty, building and housing, administration, curriculum, college community, and student projects on the well-being of the student in his college work.

In 1930 at the University of Minnesota, Clark (11) made a study of the Iowa public junior colleges. His study was largely an analysis of the annual reports made by the junior colleges to the State Superintendent of Public Instruction and to the Intercollegiate Standing Committee. A similar study was made in 1932 at the University of Minnesota by Van Gordon (49). He used the annual reports of the junior colleges for the year 1930-1931. In the same year (1932) Peet (34) made a study for the Educational Council

of the State Teachers Association in which he compared the Iowa junior colleges with those of five neighboring states.

The academic success of junior college students who transferred to the State University of Iowa was studied in 1935 by Jones (26). He concludes that two-year public junior college men and women do slightly better work in each of the last four semesters in the University of Iowa than do the four-year University of Iowa men and women, and that the two years spent in the Iowa public junior college prepare the student as well for further college work as do the first two years spent in the University.

In its April, 1936, meeting the Intercollegiate Standing Committee decided that it would be advisable to have a study made of the Iowa public junior college in order that a more objective basis might be laid for the consideration of the problems of those institutions. The problem was so extensive that it was realized at once that only a narrow phase could be encompassed in a single study. Since in any educational institution the fundamental consideration is the effect upon the individual student, it was decided that an attempt should be made to discover and describe what had happened to students in the Iowa public junior colleges. It is the purpose of this study to determine to what extent the Iowa public junior colleges have been successful in serving their communities.

Definition of Terms

In this study specific meanings have been given certain terms. Definitions of these terms follow:

Public Junior College Graduate: A student who has completed sixty hours at a public junior college (part of which may have been earned at another college and certified to the junior college by that institution) and has received or is entitled to receive a diploma or other recognition of having completed this work. In Iowa this recognition may not be called a degree.

Transferred Graduate: A graduate of a public junior college who continued his education at some senior college.

Nontransferred Graduate: A graduate of a public junior college who terminated his formal education upon such graduation.

Grade Point Average (GPA): A measure of general achievement in college work. It is derived by weighting each semester hour of credit in terms of the grade earned,[2] totalling the points earned, and dividing by the total number of semester hours.

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[2] The weighting system used in this study is: A= 4, B = 3, C = 2, D = 1, Fd = 0.

Senior College: Any standard college offering the work of the third and fourth years is considered in this study to be a senior college.

On the basis of available facts the following problems are undertaken in this study:

1. A discussion of the origin of the Intercollegiate Standing Committee in Iowa and the development of its standards for junior colleges.
2. A determination of the extent to which the Iowa public junior colleges are meeting the standards of the committee.
3. A definition and description of the type and extent of program offered.
4. A discovery of the extent to which public junior colleges are serving individuals of their communities by providing for them the type of higher education which they desire.
5. A discovery of the particulars in which nontransfer graduates differ from those who transfer.
6. A determination of the academic success of graduates who have transferred to senior colleges.
7. A determination of the extent to which junior colleges have given nontransfers the training for their present occupations.

Several methods were considered for the development of this study, but in the final analysis the following objectives were set up:

1. Since the Iowa public junior colleges had been in existence for such a short period of time, it was felt that data should be gathered which would supply a picture of these institutions from their beginning. Such information should include, in so far as possible, complete statistics of enrollment.
2. The study of students as individuals must be limited to graduates of these colleges, since any attempt to include larger numbers than that would preclude detailed analysis. It was found convenient to divide all graduates into two groups: those who continued their formal education after junior college graduation and those who did not.
3. In studying those who continued their education, it seemed advisable to limit the scope to a study of grades earned in courses taken at colleges subsequently attended.
4. It seemed that the study of those who terminated their education at graduation from junior college could best be accomplished by the use of a general questionnaire to be distributed by the junior college from which the student was graduated.
5. From junior college records of all graduates it was possible to make certain supplementary comparisons. These records list the grades the students have earned and give the subjects in which credit was given towards graduation. These records made possible a comparison of student ability measured by grade point averages, and a comparison of type of curriculum taken by the two groups.
6. It seemed desirable to obtain another supplementary measure such as could be secured through the administration of a combination of tests to all

students who were classed as sophomores in the present year, 1936-1937. The tests selected were of two types: a psychological examination or test of general mental ability, and achievement tests in English and the social studies.

7. It would be possible to present a general informational picture of the junior college situation in the state of Iowa from an interpretation of the reports of the junior college to the Intercollegiate Standing Committee and to the State Department of Public Instruction.

In preparation for this study, a questionnaire was prepared and printed; forms for obtaining enrollment statistics were mimeographed; cards on which individual scholarship records could be copied were prepared and printed; and tests were selected during the summer of 1936.

The junior college officials were informed by the Intercollegiate Standing Committee of the purposes and plans for the study. It was decided that since all colleges were taking advantage of the Student Educational Relief Act of the Federal Government it would be well to suggest to the colleges that one or more of their students obtaining this help be assigned to the junior college study. This suggestion was well received and every college has given its wholehearted, enthusiastic, and active support in order that the study might be completed.

In the fall, the writer went to each college with the materials, interviewed the deans and faculty, explained in detail to the S.E.R.A. students the procedure to be followed and methods to be employed in obtaining the items of information. They were requested to return these records at the end of the first semester. In addition to the verbal instructions, specific directions were put in the hands of each of the students assigned to the work. On March 1 letters were sent to each of the colleges explaining in some detail the purpose of the testing program and setting Monday, April 12, 1937, as the date when the examinations were to be administered. Cards were enclosed for the purpose of obtaining the exact number of students who would be available to take the examinations. The tests were sent by the University to each of the colleges on April 1 and at the same time a letter was mailed with specific directions to be followed in administering the tests.

As soon as the junior college records were returned they were divided into the two groups: those for students who continued their education and those who did not. The records of those who con-

tinued their education were then divided according to the college to which the student transferred. Each senior college to which five or more students had transferred was then communicated with by Professor H. C. Dorcas, a member of the Intercollegiate Standing Committee and Registrar of the State University of Iowa, and requests made for the records of those students who transferred to that institution.

Reports made by the public junior colleges to the Intercollegiate Standing Committee and to the State Department of Public Instruction were examined and the information in the reports tabulated. Supplementary to these, report blanks were prepared for additional information about the teachers. These were sent to the colleges to be filled in by the instructors.

The minutes of the Intercollegiate Standing Committee were examined for historical data essential to the presentation of the background of the study.

In preparation for the analysis of the data collected for this study, grade point averages were computed for each year's work on all records received from both junior and senior colleges. The subjects for which graduates had received grades in the junior colleges were tabulated in detail. Tables were prepared which included all the information received about the public junior college teachers. Data received concerning grade point averages, information about teachers and the information from the questionnaire were punched on Hollerith cards. Enrollment and other statistics were prepared in tabular form in order that they might yield the information desired. The tests were corrected as soon as returned and statistically analyzed for the individual colleges and for the entire group of sophomores.

CHAPTER III

THE INTERCOLLEGIATE STANDING COMMITTEE IN IOWA AND ITS DEVELOPMENT OF STANDARDS

The subject of accreditment and accrediting associations has been of special interest since the beginning of this century. During this time regional associations have developed a great deal of influence in regulating the work of the educational institutions and determining their rating. Many schools, for one reason or another, have not been included in the lists of membership in such agencies. The public nature of a state university brings upon it certain obligations to all schools, both high schools and junior colleges, within the state which involve the acceptance of their graduates who apply for admission.

Although the question of accepting students wishing to transfer from colleges not accredited by national or regional accrediting organizations had been of concern to the state schools, it was not until the public junior colleges began to appear in the picture that any formal attempt was made to deal with this problem. When Mason City, Iowa, organized a junior college as a department of its public school system in the fall of 1918, the school authorities asked the state institutions of higher learning for such recognition as would give a definite status to its graduates. In due time the matter reached the State Board of Education and upon the recommendations of the presidents of the State University of Iowa, the Iowa State College of Agriculture and Mechanic Arts, and the Iowa State Teachers College, that body passed a resolution creating the Intercollegiate Standing Committee. The function of this committee was to work out standards and recommend to the faculties of the three schools a uniform policy for the admission of applicants from the colleges not recognized by accrediting agencies already in operation. This Committee was organized in February, 1919, and was composed of two representatives from each of the three faculties, one of which in each case was to be the registrar. The following excerpts from the first session of the Committee on February 1, 1919, present the essential details dealing with the organization of the Committee:

At about 9:30 A.M., in the office of the Iowa State Board of Education in pursuance of an action of this board on July 31, 1918, providing for a permanent committee representing the three state institutions of higher education, to investigate, and to make to the faculties of these three state institutions from time to time recommendations concerning the relations between the state institutions on the one hand and certain junior colleges and other colleges, primarily in Iowa and secondarily in other states, on the other hand, with reference to the transfer of credits, Mr. W. H. Gemmill, Secretary of the State Board of Education, called the following gentlemen to order:

1. Professor Frank Ivan Merchant of the State Teachers College, Professor Winfred Forrest Coover of the State College of Agriculture and Mechanic Arts, and Professor Forest Chester Ensign of the State University, appointed by the presidents of the three institutions, respectively.

2. Registrars Charles S. Cory of the State Teachers College, Herman Knapp of the State College of Agriculture and Mechanic Arts, and H. C. Dorcas of the State University, designated in the Board's actions as members of this committee, *ex officiis*.

Mr. Gemmill read the following action of the State Board of Education, taken at the meeting held January 31, 1918:

The Presidents of the Iowa State Educational Institutions recommend that the State Board of Education authorize an Intercollegiate Standing Committee to determine a uniform policy of admission and advanced standing of students who come to these institutions from other colleges; that said Committee be composed of the Registrar and one faculty member of each educational institution to be appointed by the presidents; and that the report of the said Standing Committee be submitted to the governing faculties, and when approved by any two of these, it shall constitute the policy of said institutions until modified by a subsequent report of said Committee.

In the minutes of the Committee for May 14, 1921, the following notation appears:

It was felt by the Committee that it might be advisable to seek a closer relationship with the Board on Secondary School Relations and it was decided to ask the Secretary of the Board on Secondary School Relations to meet with the Intercollegiate Standing Committee at meetings when institutions giving both secondary and collegiate work were to be considered.

Since there would be few if any meetings when such institutions would not be under consideration, the Secretary of this Board, who served also as Secretary of the State Board of Education, thus became an advisory member of the Committee.

The junior college law of 1927 placed the Iowa public junior colleges under the supervision of the State Department of Public Instruction. Since that time the State Superintendent of Public

Instruction has co-operated closely with the Intercollegiate Standing Committee, has made use of it to keep in touch with the junior colleges, and in practice, though not officially, has been a member of that body, meeting with it either in person or through a representative, and sharing in the discussions.

As the Committee carried its work over a period of years, changes in the personnel of the faculties brought changes in the personnel of the Committee:

Mr. J. R. Sage of the Iowa State College of Agriculture and Mechanic Arts replaced Dr. Herman Knapp as Registrar of that institution and as a member of the Committee in 1920.

Dean M. J. Nelson of the Iowa State Teachers College took the place vacated by Dr. Frank Merchant upon his retirement in the spring of 1935.

As Dr. C. Cory retires, his place will be filled by Dr. Selmer C. Larson, the new Registrar of the Iowa State Teachers College.

Mr. W. H. Gemmill, having retired from the Secretaryship of the State Board of Education and from the Board on Secondary School Relations in the spring of 1937, will no longer serve in an advisory capacity. At the present time his successor on the Committee has not been appointed.

From the very beginning the Committee has given careful attention to the formulation of standards, and through visitation and inspection has attempted to bring unaccredited colleges up to those standards. The first mention of a public junior college is in the minutes of the Committee bearing the date of August 19, 1919, at which time, among a list of colleges to be placed on the "accredited list of the State Institutions," was the "Mason City Junior College (for one year of collegiate credit)." In a second notation (May 14, 1921) visitation procedure is indicated:

Mason City Junior College

Mr. Cory and Mr. Ensign visited Mason City Junior College, Mason City, Iowa, May 6, 1921, and recommended that credit for two years' work of college grade be granted. Their recommendation was approved. The Secretary was also instructed to notify the Superintendent of the Mason City Junior College of the following recommendations which were adopted.

1. That it be the policy of the committee not to recommend for accrediting institutions of higher learning, including junior colleges, in which students who have not completed fourteen units of secondary work are permitted to recite in college classes.

> 2. That it be the judgment of the committee, that, so far as possible, in institutions of higher learning, including junior colleges, the teaching schedules of all teachers should be confined to college classes.

These last two paragraphs include the first standards which the Committee set up as applying definitely to the junior colleges. In the minutes of the same meeting, in a section dealing with the visitation and accrediting of the Burlington Junior College for one year's work, an additional regulation was set up, namely, that in colleges with affiliated academic departments the total teaching load of instructors teaching more than five hours of college work should not exceed eighteen hours per week.

In the same minutes appears the following notation:

> Mr. Cory moved that Mr. Dorcas and Mr. Sage be appointed a sub-committee to revise the report blanks and standards for accrediting and report on this matter at the next meeting.

In the minutes of the Committee for April 23, 1924, a report of the above subcommittee was recorded in the following words:

> Professors Dorcas and Sage were designated at an earlier meeting to revise the report blanks of the committee (a) for indicating enrollment, admission requirements, student schedules, etc., (b) for indicating teaching loads and preparation of faculty members. The sub-committee submitted copies of the revised blanks for consideration. It was felt that while it probably would not be advisable to ask for information as to the preparation which each faculty member has had for each subject which he is teaching, it was felt that we could quite properly require that the major subjects and minor subjects of each instructor be indicated. The sub-committee accepted this suggestion. With this understanding the report of the sub-committee was adopted.

In the minutes of November 2, 1923, it is recorded that a subcommittee was appointed to investigate and report upon the general topic of junior colleges. The question of accepting more than two years of college credit from an accredited junior college was discussed, but while it was the opinion that not more than two years of work should be accepted, no definite action was taken, pending recommendation of the above subcommittee.

In a meeting of April 23, 1924, Professor Merchant stated that the subcommittee on junior colleges was waiting for "a special report on junior colleges which is being prepared by the Bureau of Education and is to be published in the near future by the University of Minnesota."

On May 12, 1925, the subcommittee on junior colleges made a report summarizing the two-volume study of Dr. L. V. Koos of the University of Minnesota. At this same time the subcommittee presented standards for accrediting junior colleges and a form on which they were to make annual reports. A copy of these first formal standards may be found in the appendix (p. 125). Both the standards and the report have undergone a number of changes since that time, especially in the direction of clarifying the wording and the addition of clauses of a specific nature. The standards as revised and written in the minutes of the twenty-sixth session of the Committee held on June 29, 1935, and the report form in use at the present time may be found in the appendix (p. 125).

As one reads the minutes of the Committee he cannot fail to see that the standards have never become static. Each year the Committee has had to re-interpret its standards to meet new situations in individual junior colleges and in so doing has broadened the standards. Many times it has gone beyond the written standards and has given advice on subjects not mentioned directly in the standards but contained in the spirit of the rule. In April, 1936, the Committee approved two new working principles pertaining to the standards:

1. No college or junior college should be established or continued unless it is able to equip its library and its laboratories on a suitable basis and unless it can maintain a salary schedule which will be likely to attract and retain the services of persons who are thoroughly successful and competent in the fields in which they give instruction.

2. If an institution employs a new instructor who does not meet the standards or if the institution assigns a new subject to an instructor who does not meet the standards for that work, this act will be considered grounds for refusing to accept credits for the year.

Problems involving the maintenance of the standards as established and revised from time to time have confronted the Committee at each of its meetings. As is true of all such agencies, the mere publishing of requirements has not assured compliance. Certainly during the years of economic stress it would have been much easier for the junior colleges to have lowered their standards had it not been for the vigilance and friendly encouragement of the members of the Intercollegiate Standing Committee.

As an example of the means by which the Committee has attempted to maintain standards, the following list of warnings and recom-

mendations sent by it to junior colleges are selected from the minutes of the Committee's twenty-seventh session, April 10, 1936. From these excerpts it is possible to see the care taken by the Committee in encouraging the colleges to raise their standards at every point. Such notations as these have been made for the benefit of the colleges each year:

1. Recommendations referring to teachers' standards:

a. The Committee feels doubtful whether the salary schedule is such as to attract and retain the services of desirable persons for junior college work. (Twelve of the twenty-seven public junior colleges received a warning of this type.)

b. (Teacher) should not be continued in that work until the standard (graduate hours credit) is met in full. (Sixteen individual cases were cited.)

c. Three other recommendations were made regarding the qualifications of teachers.

2. References to standards on curriculum:

a. Continue to accept two years of credit if work is offered which closely approximates the work of freshmen and sophomores in a college of liberal arts.

b. No college credit should be offered in arithmetic.

c. There is no objection to the organization of junior college work in shorthand and typewriting for suitable college credit if the classes are entirely separate from high school classes and if the instructor meets the standard in full.

d. In response to a request the Committee recommends delay in giving a course in general science until there has been further development in this field.

3. Regulations directly affecting students:

a. Junior colleges should maintain the same entrance requirements as are maintained by standard colleges of liberal arts.

b. There should be no mixture of junior college students with high school classes with the expectation of giving college credit. There is no objection to permitting a junior college student to take high school work, if his junior college schedule of work is reduced proportionally. The records should show clearly just what work is taken.

c. Freshmen should not be permitted to carry extra work. No student should be permitted to carry extra work except on the basis of a superior scholarship record. (Six colleges.)

4. Other regulations:

a. The laboratory facilities for work in chemistry and the library facilities should be increased.

b. Junior colleges are not to accept credit from another institution un-

less such credit would be accepted by the University of the state in which the institution is located.

c. The Committee feels that the junior college should be discontinued unless there could be an enrollment representing a good-sized class in freshman subjects and at least a fair-sized class in sophomore subjects. (Three colleges.)

The procedure of accrediting by this Committee is unique in the country, although many types of organizations are in existence. The American Association of Junior Colleges and the American Council on Education are national in scope. The North Central Association is an example of a regional accrediting association. In several states the universities act in this capacity, while in others the state departments of education or college associations serve as accrediting agencies. The method used in Iowa has been very satisfactory for two reasons. First, the personnel of the Committee has been sympathetic with the junior colleges and has encouraged them in their attempt to become effective institutions. Second, there have been few changes in the membership of the Committee and over the eighteen-year period the individual members have been able to study the problems of each of the colleges in a way that would not have been possible had they been associated with them for only a year or two at a time.

CHAPTER IV

IOWA PUBLIC JUNIOR COLLEGES

The first public junior college in the United States is generally conceded to be the one organized at Joliet, Illinois, in 1902 through the direct influence of President William Rainey Harper of the University of Chicago. In the early period of development the interest and encouragement of such men as Harper, David Starr Jordan of Stanford University, and A. F. Lang of the University of California were very important. These men had a vision of the time when the universities would be relieved of the junior college program so that they could concentrate their efforts on the work of the upper years. As the movement gained momentum, however, it may be said, in general, that the junior colleges have arisen out of the public demand for increased opportunities for higher education.

In the thirty-four year period since the junior college at Joliet was established, 229 public junior colleges have come into existence, about 200 of which are less than fifteen years old. The State of California has been the leader in all phases of junior college development and is far ahead of the other states today, both in total number of public junior colleges and total enrollment.

The development of the public junior college in Iowa, which has come entirely in the second half of the thirty-four year period, has been relatively rapid. Thirty-one public junior colleges have been organized in this state since 1918, all but six since 1925. In 1918 the first of these schools was established at Mason City. At this time, according to McDowell (2, p. 47), there were probably only thirty-nine public junior colleges in the United States. Twenty-one of this number were in California and the rest in nine other states.

At this time only three states had gone so far as to enact legislation authorizing junior colleges. The Iowa legislature did not recognize the existence of the public junior college until it passed the tuition law of 1923.[3] At that time five institutions of this type were in existence, two with two-year curricula, one with a one-year

[3] The Iowa laws referring to public junior colleges are found in the appendix, p. 128.

curriculum, and the other two, having just been established, offering the first year of a two-year curricula. By 1927, when the Forty-second General Assembly legalized the public junior college, making it definitely a part of the public school system of Iowa, there were five colleges with two-year curricula and four colleges beginning their career. The college at Red Oak had been offering only a one-year curriculum from its beginning in 1921 and did not add the second year's work until the school year 1930-1931. Only during the past six years (1931-1937), after the law of 1927 was amended limiting the establishment of public junior colleges to districts with a population of twenty thousand or more, has there appeared any stability in the Iowa situation. In that period twenty-seven junior colleges have been in operation. There is some significance in the fact that the period of most rapid development coincides with the beginning of severe unemployment in this state, as within the four years preceding 1932 twenty-one public junior colleges were organized, though four were abandoned after a trial of a year or two.

Enrollment

An idea of the size of the Iowa public junior colleges can best be obtained if they are divided rather arbitrarily into three groups. There are nine of these schools whose annual enrollment falls below fifty, the minimum number set by the standards of the Intercollegiate Standing Committee. These nine schools have an average enrollment of forty. Three colleges have maintained an enrollment of over 100 during most of their existence. This year one other college has an enrollment of 108. The average enrollment of these four schools is 144. The remaining fourteen have an average enrollment of 73. The average enrollment of all the public junior colleges in the state is 72.5.

As might be expected in Iowa, which is essentially a rural state, the junior colleges, like the high schools, are small. The average population of towns having public junior colleges is 7,731, but the median size is only 5,000. The average population of the towns which have junior colleges of less than fifty is 3,338; the towns with junior colleges enrolling between 50 and 100 students average 6,400; the other towns average 22,250. The following tabulation shows how the towns of these three groups are distributed on the basis of population. This table indicates the extent of the correlation

between the enrollment of the college and the population of the town.

Population	Enrollment Under 50	50 to 100	Over 100	Total
27,000 to 28,999			1	1
25,000 to 26,999				
23,000 to 24,999			1	1
21,000 to 22,999			1	1
19,000 to 20,999				
17,000 to 18,999				
15,000 to 16,999		1	1	2
13,000 to 14,999				
11,000 to 12,999		1		1
9,000 to 10,999		1		1
7,000 to 8,999	1	1		2
5,000 to 6,999	1	5		6
3,000 to 4,999	3	5		8
1,000 to 2,999	4			4
Total	9	14	4	27
Mean Population	3,338	6,400	22,250	7,731

Two of the factors which determine the size of the college are, first, the extent to which the institution is able to retain its own high school graduates, and, second, the extent to which it is able to attract the graduates of nearby high schools. From the first column of the following tabulation it will be seen that of the fourteen colleges for which estimates [4] were obtained only 28.6 per cent of the high school graduates in the median school have entered the

Junior College	Percentage, Junior Colleges	Percentage, Other Colleges	Ratio Between Junior College and Total Number Going to College
Bloomfield		8.31	
Boone		16.50	
Britt	42.23	7.92	84.21
Centerville	21.07	10.79	72.89
Chariton	18.22	8.82	67.38
Clarinda	34.71		
Creston		8.46	
Emmetsburg	29.34	7.49	79.67
Estherville	37.43	8.03	82.34
Fort Dodge		21.30	
Independence	24.18	13.35	64.43
Muscatine	28.56	14.29	66.89
Osceola	27.29	7.49	78.47
Sheldon	40.44	10.85	78.85
Tipton	27.43	13.82	66.49
Washington	31.11	17.27	64.30
Waukon	27.60	2.63	91.41
Webster City	22.60	13.41	62.47
Median	28.59	10.79	72.89

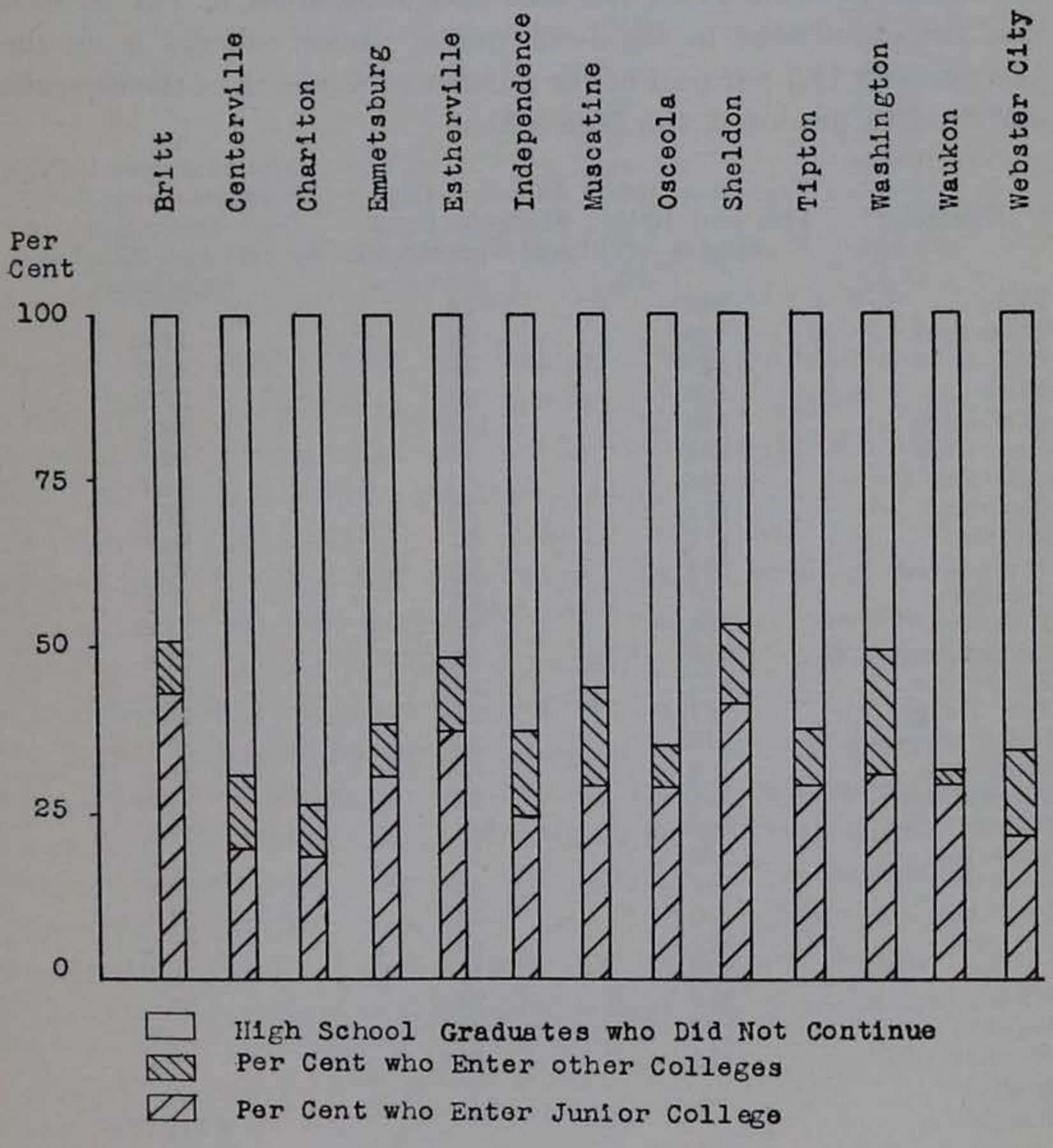
[4] Estimates on this table were furnished by the junior college administrators; it was impossible to obtain exact figures.

local junior college and that the range is from 18.2 per cent to 42.2 per cent. Column 2 shows the percentage of high school graduates who attended higher institutions other than the junior college. These figures serve to illustrate the extent to which the junior college is serving the whole community. The information from this tabulation is shown graphically in Figure 1.

In any college town it would seem to be a fair estimate that 10 per cent of the high school graduates will choose to attend a college other than the local institution and will be financially able to do

FIGURE 1

Relationships Between the Number of Local High School Graduates Who Enter the Local Public Junior College and the Number Who Go to Other Colleges than the Local Junior College



so. According to an informal report made annually to the high school administrators of the state by Professor Dorcas, Registrar of the State University of Iowa, 23.44 per cent of the high school graduates from all high schools in 1935-1936 were in college the next year. For the high schools in towns with junior colleges this figure reaches nearly 40 per cent.

Since the junior college offers two years of work, the total number of students in this institution should be compared with the number in the eleventh and twelfth grades in the high school rather than with members of the twelfth grade only. The relation between the total enrollment in the junior college and the enrollment in these two high school classes is more indicative of the relationship between the junior college enrollment of the present and its possible future growth. From the following tabulation it will be seen that the enrollment in the Iowa public junior colleges is on the average only 18.7 per cent of the number of students in the eleventh and twelfth grades of the high school.

College	Enrollment of 11th and 12th Grades	Junior College Students From Local High Schools	Ratio of Junior College Students From Local High School Divided by 11th and 12th Grade Enrollment
Albia	230	43	18.7
Bloomfield	139	24	17.3
Boone	330	45	13.6
Britt	93	23	24.8
Burlington	596	109	18.3
Centerville	281	45	16.0
Chariton	266	23	8.7
Clarinda	202	36	17.8
Creston	315	53	16.8
Eagle Grove	239	36	15.1
Elkader	59	23	37.8
Ellsworth	165	42	25.4
Emmetsburg	110	28	25.4
Estherville	182	61	33.5
Fort Dodge	581	95	16.5
Independence	149	33	22.1
Maquoketa	164	58	35.4
Marshalltown	391	56	15.8
Mason City	666	114	17.1
Muscatine	380	84	21.1
Osceola	154	34	22.1
Red Oak	239	55	23.0
Sheldon	114	40	35.0
Tipton	121	19	15.7
Washington	210	57	27.1
Waukon	175	64	36.6
Webster City	272	34	12.4
Median			18.7
Range			8.7 to 37.8

The school with the highest percentage has an enrollment which is 37.8 per cent of the enrollment in the upper two years in high school, that with the lowest, 8.7 per cent. From the total possible number of students which can be drawn from the local high school the probable 10 per cent who will prefer to go to other colleges should be subtracted. In general the supporting high school enrollment of the Iowa public junior colleges is too small. Before this situation can be changed, the number of the supporting group should be increased by enlarging the size of the junior college district to at least the area of the county.

The tabulation below has been prepared to show the enrollments in any given year of those colleges maintaining a two-year program. From 1927 to 1932, the number of colleges maintaining two-year curricula increased 300 per cent, while the enrollment increased 302 per cent. The decrease in average enrollment from 1927 to 1929 was a result of the fact that there were only six of the smaller colleges in 1927 to be averaged with the three larger colleges, while in 1928-1929 there were fourteen smaller colleges and three larger ones. From 1928 to 1936 the annual increase in total average enrollment is fairly constant, totalling 133 per cent. In 1936-1937 the enrollment dropped slightly.

Year	Colleges	Total Enrollment	Average Enrollment
1927-1928	9	648	72.00
1928-1929	17	946	55.65
1929-1930	23	1,301	56.57
1930-1931	26	1,621	62.34
1931-1932	27	1,827	67.67
1932-1933	27	1,887	69.93
1933-1934	27	1,851	68.56
1934-1935	27	1,939	71.81
1935-1936	27	1,991	73.74
1936-1937	27	1,958	72.52

From the beginning the junior colleges have been eager to enroll students from outlying communities. In the smaller communities the very life of the college depends upon its success in attracting these students, who compose nearly a third of the enrollment. The number of students who have come to the junior colleges from other than the local high schools and the ratio of this number to the total enrollment of the junior college are given as follows:

Year	Colleges	Students	Percentage Total Enrollment
1936-1937	27	624	31.87
1935-1936	27	620	31.14
1934-1935	27	586	30.22
1933-1934	27	556	30.04
1932-1933	27	568	31.10
1931-1932	27	538	29.45
1930-1931	27*	500	30.32
1929-1930	27**	389	27.94

* Two of these are colleges offering only the freshman curriculum; in 1929-1930 they added the sophomore work.

** Three of these added sophomore work in 1931-1932.

Although there is a slight increase in this percentage, from 27.94 to 31.87 per cent, it is hardly large enough to justify speaking of the increase as a trend. Should the area of the junior college district be increased, these students would become a part of the supporting population.

The distribution by colleges of percentages of students from other than the local high school is found below:

School	Percentage	School	Percentage
Albia	45.0	Estherville	36.5
Bloomfield	35.2	Fort Dodge	35.8
Boone	22.4	Independence	46.0
Britt	32.4	Maquoketa	23.7
Burlington	27.8	Marshalltown	24.3
Centerville	32.9	Mason City	32.1
Chariton	42.5	Muscatine	22.2
Clarinda	30.8	Osceola	22.8
Creston	32.1	Red Oak	30.4
Eagle Grove	12.2	Sheldon	42.0
Elkader	50.0	Tipton	29.6
Ellsworth	49.5	Washington	26.0
Emmetsburg	41.7	Waukon	16.9
		Webster City	17.1
		Median	27.8
		Mean	31.9
		Range	12.2 to 50.0

The range of these percentages is quite large, from 12.2 per cent up to 50 per cent, with the median school drawing 27.8 per cent of its enrollment from the graduates of other high schools.

As indicated above, public junior colleges are eager to obtain as many students as possible from the nearby communities. Many devices are being used to interest such individuals. The junior colleges furnish many forms of entertainment for high school assemblies. Several schools have devised varied programs in their own buildings to which they invite the graduating classes from neighboring high schools. Representatives of the colleges go out to meet indi-

TABLE 1

Number of Graduates by Graduating Classes from Iowa Public Junior Colleges

Town	Year 1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	Total
Albia										0	14	17	26	11	16	20	18	17	139
Bloomfield											0	15	9	13	14	9	13	1	74
Boone										0	17	20	14	18	17	13	13	19	131
Britt										0	0	9	11	9	10	13	9	11	72
Burlington			0	12	15	16	20	25	28	30	24	43	29	45	45	43	49	59	483
Centerville													0	10	12	11	22	14	69
Chariton										0	11	7	10	7	9	10	12	13	79
Clarinda						0	17	10	15	12	13	10	22	13	15	15	16	13	171
Creston									0	37	31	24	32	30	28	28	30	18	258
Eagle Grove											0	16	6	3	13	13	8	11	70
Elkader												0	9	6	9	12	13	14	63
Ellsworth											0	5	21	26	23	18	21	20	134
Emmetsburg													0	11	13	5	11	11	51
Estherville							0	0	0	10	16	12	13	10	17	10	16	10	114
Fort Dodge					0	1	2	27	13	15	7	17	17	15	35	21	27	24	221
Independence											0	10	2	8	10	12	9	11	62
Maquoketa										0	15	18	13	19	18	10	14	22	129
Marshalltown										0	9	8	5	17	20	21	10	22	112
Mason City	0	5	6	2	11	8	22	13	11	25	19	30	23	40	46	36	32	29	358
Muscatine												0	22	10	17	21	24	20	114
Osceola										0	7	4	10	7	13	10	16	24	91
Red Oak				0	0	0	0	0	0	0	0	0	7	15	32	15	21	18	108
Sheldon										0	14	14	14	9	10	7	7	14	18	107
Tipton										0	11	6	3	10	9	14	11	7	71
Washington										0	0	7	17	19	15	17	18	24	117
Waukon						0	12	4	10	10	6	10	9	23	16	17	18	11	146
Webster City									0	14	13	10	7	13	9	12	10	18	106
Total graduates	0	5	6	14	26	25	73	79	77	167	227	312	346	418	488	433	475	479	3650
No. of graduating classes		1	1	2	2	3	5	5	5	9	16	22	25	27	27	27	27	27	231
Average number per class		5	6	7	13	8.3	14.6	15.8	15.4	18.5	14.2	14.2	13.8	15.5	18.1	16.0	17.6	17.7	15.5
Colleges established	1	0	1	1	1	2	1	0	3	8	5	2	2						

vidual graduates and their parents. Extracurricular activities designed to attract out-of-town students are encouraged. One junior college conducts a biweekly evening program for adults and invites attendance from near-by towns. Another junior college has developed an all-day vocational guidance program to which high school seniors from near-by towns are invited. Speakers on this program are representatives from various colleges in the state, each presenting the opportunities and obligations of one or more occupations. These methods and others are being used by the junior colleges to attract the students who are not within the junior college district.

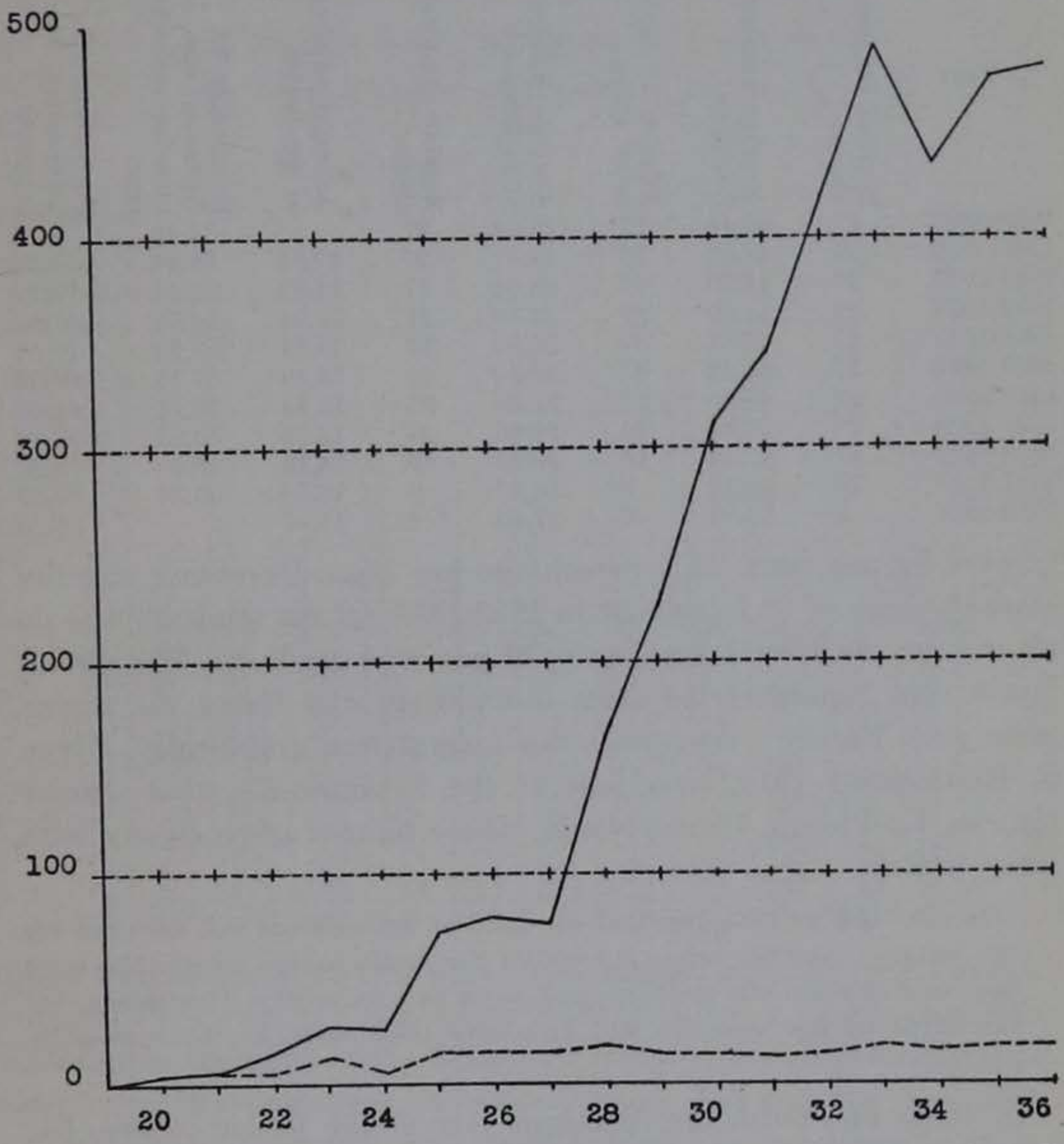
As would be expected, highway conditions play a part in determining the attendance of students living outside the school district. Pavement and a car will bring students a distance of twenty miles or more, but when it is necessary for these students to live in the town the chance of their attendance is decreased. Under such circumstances the cost may be nearly equal to that of residence in a four-year college or university, and the attraction of these schools is too great for the junior college to overcome.

During the short period of public junior college history in Iowa (1918-1936) there has been a total of 231 graduating classes from the several junior colleges. Table 1 presents the number of graduates in each of these classes. The average number of graduates since the first graduation in 1920 is 15.5 as compared with 17.7, the average number in 1936. The largest class included fifty-nine students and was graduated from Burlington Junior College in 1936. There have been two classes with one graduate each, one at Bloomfield in 1936, and the first student to be graduated at Fort Dodge in 1924.

During the past five years, when each of the present twenty-seven public junior colleges has had a class completing a two-year course, the average number of graduates has increased slightly, from 15.5 to 17.7. However, the largest average class was 18.1, in 1933. The total number and the average number of graduates per graduating class are shown graphically in Figure 2.

FIGURE 2

Total Number of Graduates from Iowa Public Junior Colleges Compared to the Average Number per Graduating Class 1920 to 1936 (The solid line indicates the total number of graduates. The broken line shows the average number of graduates per graduating class.)



In order to picture the relationship between the number of graduates and the number of students who dropped out of college, Table 2 was prepared. It was not possible to obtain information following the same individuals from one year to another, but it seemed advisable to present the information which was available. In this table for the years preceding 1930-1931 only those colleges which maintained the two-year program are included. The median percentage of freshmen returning for the second year of work is slight-

TABLE 2

RELATIONSHIP BETWEEN AVERAGE NUMBER OF FRESHMEN WHO RETURN FOR SOPHOMORE WORK AND PERCENTAGE OF SOPHOMORES WHO GRADUATE

Year	Number freshmen classes	Average number freshmen	Number of sophomore classes	Average number of sophomores	Number graduating classes	Average number of graduates	Percentage of freshmen who return for sophomore year	Percentage of sophomores who graduate
1936-1937	27	47.48	27	25.04	27		51.18	
1935-1936	27	48.93	27	24.81	27	17.74	52.01	71.50
1934-1935	27	47.70	27	24.04	27	17.59	53.91	73.17
1933-1934	27	44.59	27	23.89	27	16.04	54.53	67.14
1932-1933	27	43.81	27	25.80	27	18.07	58.20	70.04
1931-1932	27	44.33	27	23.33	27	15.48	57.11	66.35
1930-1931	27	40.85	25	21.76	25	13.84	58.12	63.60
1929-1930	25	37.44	21	20.00	21	14.62	53.85	73.10
1928-1929	21	37.14	16	20.00	16	14.19	45.20	70.95
1927-1928	16	44.25	9	26.67	9	18.56	53.34	69.59
1926-1927	9	50.00	6	27.40	6	15.40		56.20

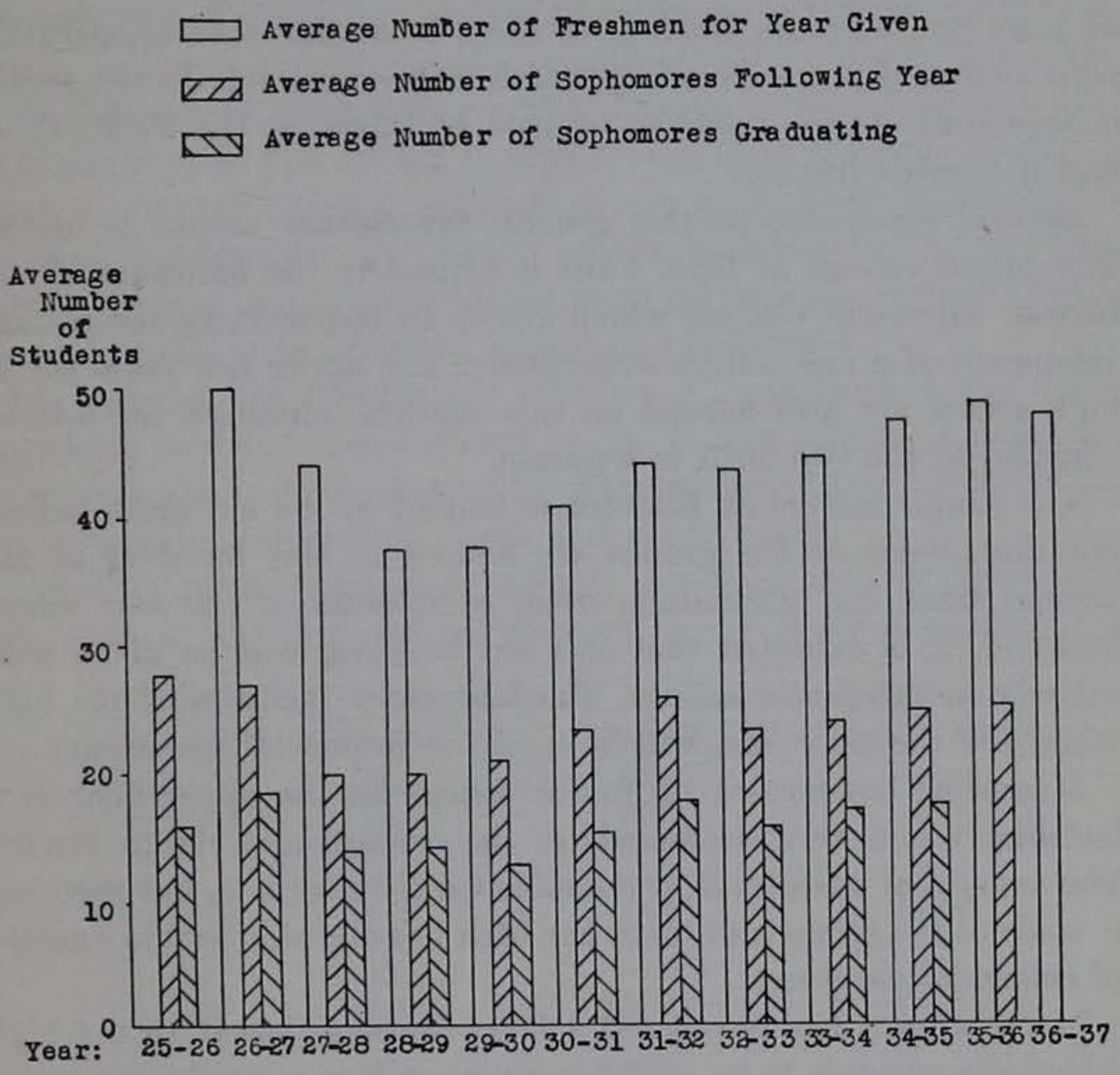
ly over 54 per cent. This percentage has been decreasing steadily since the high of 58.2 per cent in 1932-1933. Of the students who do return for the second year, only 70 per cent graduate. The second figure does represent the same individuals who began the sophomore year. Figure 3 represents this information graphically. Byron S. Hollinshead (21), president of the Scranton-Keystone Junior College, La Plumn, Pennsylvania, whose figures agree closely with these, states:

> In our work we recognize that one-third of our students will drop out for one reason or another before the end of the junior college course. Not more than half of those who graduate will go on to a university. This means that two-thirds of our students will terminate their work in the community college.

Of those who finish the freshman year of the junior college, but do not return for the second year, a number transfer to other institutions. According to the statements of several of the deans of Iowa junior colleges, when students desire technical courses, such as are offered at the Iowa State College of Agriculture and Mechanic Arts, they are definitely encouraged to transfer at the end of the first year in the junior college. It was impossible to obtain exact data regarding the number of such transfers, but administrative officers were asked to estimate the numbers who transferred

FIGURE 3

The Average Number of Freshmen in Iowa Public Junior Colleges, the Average Number who Returned for the Sophomore Year, and the Average Number of Sophomores who Graduated



from their colleges at this time. The largest number of freshmen transfers reported for any single institution for a single year was sixteen. On the basis of the fifteen estimates received, probably it is safe to say that each year there are between 150 and 200 freshmen, or from 12 to 15 per cent, who transfer from junior colleges to other institutions of higher learning.

Housing Facilities and Physical Equipment

The Iowa public junior colleges are housed, with few exceptions, in the high school buildings. In most cases the rooms used by the junior colleges are in one section of the building where some measure of segregation from the high school is possible. In a few cases the rooms used by the junior college students are in various parts

of the building and are used alike by both high school and junior college students. Most of the junior colleges provide a pleasant, well-furnished room as a home-room or work-room for the students. Such provision is not yet adequate or general enough to meet the needs of a collegiate group. Ordinarily there is considerable co-operation with community organizations which makes available to the junior college students the facilities of such buildings as the Y. M. C. A. and the public library.

Several exceptions to this general description should be noted. The junior college at Iowa Falls is housed in the buildings of the former Ellsworth College which afford an opportunity for the development of a fine college atmosphere. The upper two years of the high school are also housed on this campus, although the administration of the two units is separate.

The junior college at Elkader is housed in the old grade school building. Some of the grades are housed in this building at the present time, but ultimately, upon completion of the new school building, it is expected that this old building will be given over entirely to the junior college. The laboratory facilities of the high school, on the same site, will be used for junior college science.

Muscatine has housed its junior college on the upper floor of a building which also accommodates the seventh and eighth grades. The amount of space thus provided is hardly adequate, but good use is made of the rooms and there has been developed a certain amount of college atmosphere.

Marshalltown has purchased a large house adjacent to the high school site which is to be used for junior college purposes exclusively. Certain rooms in the house will be equipped as classrooms, others will be arranged for social affairs, class and committee meetings. The classes which require special facilities, such as laboratories, will continue to use the high school equipment.

An example of a junior college housed with a high school but still well segregated is found at Centerville. Here half of the third floor of the high school building is for the junior college and the rooms in this section of the building are well arranged to take care of the integration of the college schedule. The library-reading unit is large and situated so that it is at the center of the college activity.

In general, library units are used in conjunction with the high school although several exceptions, such as the one noted above, do

exist. Albia has the good fortune to have a special addition to the city library for the use of the junior college. Burlington has a junior college reading room adjoining the library. Clarinda has provided a room which has been developed into a junior college library unit. Creston has turned the library section of its library-study hall unit over to the junior college, which is completely separated from the study hall so that it forms a very desirable unit. At Mason City the college is able to use to very good advantage the city library which is adjacent to the high school building. The Muscatine library in the junior college building is well equipped and arranged. At Webster City a separate reading room for junior college students is provided adjoining the library.

In general, the library and laboratory facilities are only fairly adequate for the courses offered by the junior colleges, but in most instances the colleges make use of municipal libraries which are quite well equipped with books and study space.

The following tabulation presents a comparison of the number of books in the libraries as reported to the State Department of

College	Volumes 1930-1931	Volumes 1936-1937	Increase Over Six-year Period
Albia	5,000	5,400	400
Bloomfield	269	469	200
Boone	4,800*	4,800*	
Britt	625*	946*	321*
Burlington	4,860*	6,385*	1,525*
Centerville	63	380	317
Chariton	332	602	270
Clarinda	7,028*	8,829*	1,801*
Creston	3,187*	5,527*	2,340*
Eagle Grove	312	3,000*	
Elkader	2,500*	3,500*	1,000*
Ellsworth	7,293*	8,893*	1,600*
Emmetsburg	1,800*	2,200*	400*
Estherville	3,300*	3,850*	550*
Fort Dodge	4,281*	5,724*	1,443*
Independence	200	480	280
Maquoketa	575	2,280*	
Marshalltown	2,490*	3,204*	714*
Mason City	4,356*	5,300*	944*
Muscatine	477	1,121	644
Osceola	105	367	262
Red Oak	1,500*	2,110*	610*
Sheldon	947	3,750*	
Tipton	135*	736*	601*
Washington	2,800*	4,171*	1,371*
Waukon	4,455*	5,509*	
Webster City	605	775	170

* Junior college and high school library combined.

Public Instruction and the Intercollegiate Standing Committee in 1930-1931 and 1936-1937. The method of reporting the number of volumes does not permit meaningful analysis. Books in the high school libraries are always available to junior college students and in very few cases are general reference books duplicated in the separate libraries of the junior colleges. According to statements of administrators, junior college students seem to use the city libraries in preference to high school libraries. Johnson (24) in his study of college libraries has shown conclusively that the number of volumes in a library is a very poor measure of the effectiveness of an institution of learning, since the number of books has very little relationship to the extent to which books are used.

The laboratory facilities have been reported in terms of the value of materials and equipment. The values as set out in the reports for 1936-1937 are presented below:

College	Physics Laboratory	Hours Offered	Chemistry Laboratory	Hours Offered	Biology Laboratory	Hours Offered
Albia			$2,000	16	$1,750	8
Bloomfield					1,600	8
Boone	$4,500	8	5,200	8		
Britt			1,550	10		
Burlington	4,600	10	3,500	25	1,500	10
Centerville	2,500	10	2,750	12		
Chariton			1,200	8	100*	8
Clarinda			3,000	16	2,000	12
Creston			3,900	16	2,400	8
Eagle Grove			2,800	16		
Elkader			3,000	8	2,000	8
Ellsworth	1,850	8	2,450	16	6,850	16
Emmetsburg			3,200	9		
Estherville			1,300	10	800	8
Fort Dodge	2,000	10	2,500	8	3,100	8
Independence			1,500	8		
Maquoketa	4,000	10	3,000	8		
Marshalltown			4,000	8	2,500	8
Mason City	4,800	12	4,250	22	2,250	8
Muscatine			3,270	12	1,087	8
Osceola			4,000	16		
Red Oak			2,000	8		
Sheldon			4,300	16		
Tipton			650	8		
Washington			4,100	24	1,000	8
Waukon			3,000	20	375	8
Webster City			3,500	16	1,500	8

* Geology.

Note: One-year courses are those in which either eight or ten hours of course work are offered.

The number of hours of course work offered in each of these subjects is indicated in the tabulation above for purposes of compari-

son. Mason City is the only school offering more than one year of physics. Fourteen of the twenty-six colleges offering chemistry provide for more than one year. Two schools offer more than one year of biology.

One junior college is offering chemistry in a $650 laboratory, while another has an investment of $5,200. In general, the cost of the equipment does not decrease in proportion to the decrease in the enrollment of the college.

Eells (3, p. 440) reports a study which gives a detailed analysis of essential equipment for a junior college chemistry laboratory, including all necessary equipment for the proper teaching of general chemistry, qualitative analysis, and elementary organic chemistry, which are the three courses most generally taught in the Iowa schools.

> It was assumed that a main laboratory, at least twenty-three by twenty-eight feet in size, could be equipped for twenty-four students working simultaneously. Estimates based in many cases upon practice at Stanford University for similar courses . . . indicate that from $8,000 to $9,500 would be required to furnish completely and maintain a chemistry laboratory in a junior college for twenty-four students in each of the three courses mentioned.

The $8,000 estimate would apply if tables and plumbing were not included, and this is assumed to be the basis on which reports are made in Iowa. If this standard is conceded to be too high and an arbitrary standard of half this sum, or $4,000, set, only seven of the twenty-six colleges offering chemistry could meet the standard. Ten of the colleges with equipment valued at less than $4,000 offer more than one year of work. The range in the estimated value of equipment in these ten colleges is from $1,300 to $3,500, with a median of $2,825. The other nine colleges, offering but one year of work, have equipment of an estimated value of $650 to $3,200.[5] The variety in the laboratory equipment provided in the chemistry course illustrates quite well the range of opportunity offered by these junior colleges. In general, the junior college facilities need to be practically those of the best high schools, with some extension of libraries and laboratory equipment, and with a better trained teaching staff.

A question which has not been given the attention it deserves is that which has to do with the extent of the opportunity which the

[5] Only three of these nine colleges have equipment valued at less than $2,000.

small junior college provides for students who are above average in ability and those who are exceptionally capable.

It will be seen in Chapter VI that the junior colleges have students who equal in ability the group of juniors at the State University of Iowa concerning whom comparable data were available. From the point of view of the junior college, it is desirable to secure the registration of as many of the better students as possible. However, it is likely that the extremely bright chemistry or physics student would be under a handicap in laboratories such as those here described as compared with the best available facilities. Likewise it might be supposed that a student who has a special aptitude for work in the social studies or literature would not obtain deep satisfaction in the typical junior college library.

CHAPTER V

THE CURRICULUM AND INSTRUCTION

The effectiveness of an institution of learning depends upon many factors; two of the more important ones are the teacher and what is taught. Such factors as buildings, libraries, laboratories, financial support, etc., while not measuring the excellence of an institution, have much to do with the kind of teacher that may be obtained and the determination of the curriculum.

The public junior college in the State of Iowa is supported largely by the tuition paid by the students. It is the practice to expect the tuition income to pay for the salaries of teachers who are added because of the junior college. All other expenses, such as operation and maintenance, are borne by the local school district. Colleges the size of the smaller Iowa public junior colleges cannot be adequately supported in this manner. Teachers such as a college program demands cannot be adequately paid by the tuition of thirty to forty students, with the result that frequently the general school budget is overtaxed to make the salaries adequate. In attempting to do this, school districts may sacrifice and impair the program of the elementary and secondary schools rather than forego the junior college.

In spite of these difficulties the Iowa public junior colleges have been able to continue their existence and to maintain to a fair degree the objective standards as set up by the Intercollegiate Standing Committee. As was pointed out in Chapter III, the Committee has found it necessary each year to call attention to standards that are being slighted. Most of these cases deal with the teacher, though some have to do with the curriculum. The standard as set up for teachers of academic subjects is:

> Unless otherwise specified in these standards an instructor must have a master's degree from a recognized graduate school and may give instruction only in the field of his graduate major or in the field of his graduate minor, consisting of at least ten semester hours of graduate work. When possible the teaching should be confined to the field of the graduate major.

According to the reports made to the Department of Public Instruction and the Intercollegiate Standing Committee this year,

there is in the Iowa public junior colleges only one teacher of academic subjects who does not have a master's degree and this person has the equivalent of that degree in training in the subject taught. It is only fair to say that this achievement is largely a result of the care with which the Intercollegiate Standing Committee has done its work. The majority of violations of the teaching standard arise because of the desire of the school to have the teacher teach some subject which is not in his major or minor field.

The number of teachers of academic subjects in each of the junior colleges follows:

College	Number of Teachers	Number of Teachers Based on Normal Teaching Load*	Number of Students	Student-Teacher Ratio
Albia	7	3.73	78	20.9
Bloomfield	6	2.60	37	14.2
Boone	6	3.33	58	17.4
Britt	6	2.67	34	12.7
Burlington	12	5.80	151	26.0
Centerville	5	3.07	67	21.8
Chariton	6	3.60	40	11.1
Clarinda	5	4.00	52	13.0
Creston	8**	5.60	78	13.9
Eagle Grove	7	3.53	41	11.6
Elkader	6	3.87	46	11.9
Ellsworth	8	5.20	83	16.0
Emmetsburg	5***	2.73	48	17.6
Estherville	8	3.53	96	27.2
Fort Dodge	7	5.93	148	25.0
Independence	6**	3.20	61	19.1
Maquoketa	8****	3.33	76	22.8
Marshalltown	8	4.20	74	17.6
Mason City	9	5.33	168	31.5
Muscatine	6	4.73	108	22.8
Osceola	7	3.60	44	12.2
Red Oak	6	3.40	79	23.2
Sheldon	8	3.47	69	19.9
Tipton	7	3.27	27	8.3
Washington	8	4.40	77	17.5
Waukon	6	3.40	77	22.6
Webster City	7	4.80	41	8.5
Mean	7.0	3.94	72.5	18.4

* Total hours college teaching by all teachers divided by 15, the normal teaching load.

** One physical education teacher also has a master's degree.

*** The Dean at Emmetsburg has the degree of Doctor of Philosophy.

**** One teacher has the degree of Doctor of Philosophy. The music teacher and physical training teachers also have master's degrees.

The total number of academic teachers indicates the possible breadth of curricular subjects which the college can offer, but it gives a false picture of the staff of the college because of the vary-

ing proportion of time spent in the junior college and the high school by these teachers. In order to gain a true picture it is desirable for the reader to think in terms of the number of full-time teachers that would be required to carry forward the academic program of any given college. To ascertain this mythical figure, the total number of teaching hours in each college program for the year 1936-1937 was divided by fifteen, the commonly accepted maximum load for a junior college teacher, the result being the number of full-time teachers who would be required in that particular school. This figure is given in column two. Although the Burlington Junior College with twelve teachers has the largest staff, the full-time equivalent of 5.8 teachers is exceeded by that of the Fort Dodge Junior College with seven teachers and is only slightly more than that of a number of other colleges. The advantage to the Burlington Junior College is that it has a larger number of teachers, each majoring in a different subject, which permits this school to offer a larger variety of subjects. In the fourth column the student-teacher ratio based upon the equivalent number of full-time academic teachers is given for each junior college. The larger schools have the larger ratios because they do not find it necessary to offer subjects to small classes.

The average college has the equivalent of slightly less than four full-time academic instructors; the range is from 2.6 instructors to 5.93. The average student-teacher ratio is 18.4, with a range from 8.3 to 31.5. Eells (14, p. 398) reports that the standard student-teacher ratio for colleges is 10 or 12 to 1, and estimates the probable ratio in junior colleges to be near 17 to 1. He does not feel that the junior colleges should maintain the collegiate ratio because they do not need to provide for upper-division specialization, but adds that a ratio of 20 to 1 may endanger educational efficiency. Ten of the Iowa public junior colleges have ratios of greater than 20 to 1, but the ratios would be smaller if non-academic teachers were included.

Few teachers and small classes are serious disadvantages of the small junior college. Its curriculum cannot be expanded to meet needs or interests of individual students when there are, on an average, seven teachers, each of whom can teach only two or three subjects. It would be disastrous to the quality of work done to lower the standards in order to make it possible for teachers to

teach in fields in which they have not sufficient preparation. Therefore, small colleges must be content with a narrow curriculum. It will be noted that seven schools have pupil-teacher ratios of from 12.7 to 8.3. This in most cases must mean that the schools are offering too broad a curriculum for the number of students. The cost of such instruction becomes so high that the college has no right to expect the district to support its program.

One solution which has been suggested for the problem of the extravagance of small classes is to maintain a single curriculum which is cultural in nature, one that attempts to develop citizenship and appreciation of the world and society. It would seem much better that these schools should do this one thing well than that they should spread out their energies and resources and touch lightly many phases of education.

The fact that specialization frequently begins at the end of the first two college years means the passing of the last opportunity for the student to venture into those areas which enrich his life culturally. If he is to go into law or commerce, he must turn his back for a time upon literature and science; if he goes into medicine he will neglect to a certain extent the areas of literature and the social studies. If the individual terminates his education at this time, the insistent demands of labor, business, and social life prevent the development of cultural values that have not been made his own in junior college. The need for a broad intellectual base was well expressed by President Gerard Swope (46) of the General Electric Company when he said:

> I think it is a question of serious moment for engineers to consider whether the training in our technical schools and colleges should not be conceived on a broader base rather than as at present, laying emphasis on proficiency in narrow and specialized fields. Many industries are looking for men with broader training who defer specialization until they have chosen the field of their life work.

Dean J. H. Nicholson (33, p. 150) expresses a similar attitude in his discussion of education for industry and commerce. He writes:

> The distinction between technical and cultural studies still holds, though it needs re-definition in the light of modern conditions. Technical education should never be merely a training in specialized skills. It should rest on a broad basis both of knowledge and of practice. This means that a good deal of what a boy learns at a technical school or college will never be of direct use to him in industry. . . The highly specialized worker cannot easily

> find alternative employment if for any reason the process on which he is employed ceases to be necessary or if there is a surplus of labor in his branch of the industry. . . Technical education should not be begun until a sound foundation of general knowledge has been laid. I believe that every course should include some study of social and economic relationships.

Discussing students in professional schools, Charters (27, p. 34) states:

> Graduates of professional schools are in need of that liberal education which raises them from the status of professional men to men with a profession.

As is indicated in the preceding paragraphs, the term general education as used here, does not imply, necessarily, a new type of curriculum. There are points at which improvement should be carefully considered, but more important from the point of view of true cultural value, is the breadth of the point of view, the depth of understanding, and the degree of maturity with which the course is taught. Experienced and capable teachers who plan to make teaching a life work should make up the faculty of the junior colleges. Educational objectives will have to be the living of fuller lives rather than the preparation for the ability to receive a higher compensation, or of engaging in the more desirable types of employment as has been the case for so many years.

Junior College Instructors

Blezek (4) found that the Iowa public junior college instructor was carrying a rather heavy teaching load in terms of hours per week, resulting from his combined load of college and high school teaching. He reported that the Iowa public junior college teacher was as well trained as the teachers in the junior colleges throughout the United States, and that he spends slightly more of his time with the junior college than with the high school. Blezek states further that the junior college instructors in Iowa teach within their major department more consistently than do the teachers of freshmen and sophomores in other junior colleges and four-year colleges in the United States.

In Tables 3 and 4 are distributions of the sources of baccalaureate and master's degrees of academic teachers in the Iowa public junior colleges. One hundred eight, or 64.2 per cent, of the 183 junior college teachers who reported on this item have their baccalaureate degrees from colleges in Iowa, while 101 of 191 teachers, or 53 per

TABLE 3

Sources of Bachelors' Degrees of Iowa Public Junior College Teachers

	State Universities		Agricultural and Technical Colleges		Other Universities		Colleges		Teachers Colleges		Total	
	J	N	J	N	J	N	J	N	J	N	J	N
California					1	1					1	1
Colorado					1	1					1	1
District of Columbia							1	1			1	1
Illinois	6	6	1	1	4	4	6	7	1	1	15	19
Indiana	2	2					2	2	1	1	5	5
Iowa	17	27	4	4	6	8	23	49	15	20	27	108
Kansas	1	1					1	1	2	2	4	4
Michigan	3	3					1	1			4	4
Minnesota	4	4					3	3			7	7
Missouri	1	1			1	1	5	5	3	4	8	11
Nebraska	5	6					3	3	1	1	8	10
North Dakota	1	1									1	1
South Dakota	1	1					2	2			3	3
Virginia							1	1			1	1
Washington									1	1	1	1
Wisconsin	1	1					1	1	3	3	5	5
Total number of teachers												183

J — Number of junior colleges with teachers having degrees from each group of colleges.

N — Total number of teachers having degrees from each group of colleges.

cent, have their master's degrees from the State University of Iowa. Sixteen teachers in thirteen of the junior colleges have master's degrees from the Iowa State College of Agriculture and Mechanic Arts; three have master's degrees from Drake University; and one from Cornell College. This makes a total of one hundred twenty master's degrees, or 63 per cent, from Iowa institutions. Universities in fourteen states are represented by master's degrees in the Iowa public junior colleges. Two of the instructors have degrees of Doctor of Philosophy from the State University of Iowa. One teacher of academic subjects does not have a master's degree, but has the equivalent in training in his teaching field. Two instructors have two master's degrees. The total number of teachers with a master's degree or more is 191.

TABLE 4

Sources of Masters' Degrees of Iowa Public Junior College Teachers

	State Universities		Agricultural and Technical Colleges		Other Universities		Colleges		Teachers Colleges		Total	
	J	N	J	N	J	N	J	N	J	N	J	N
California	2	2			1	1					3	3
Colorado	3	3									3	3
Illinois	8	8			11	12					15	20
Indiana	1	1							1	1	2	2
Iowa	27	101	13	16	3	3	1	1			27	121
Kansas	2	2									2	2
Michigan	4	4									4	4
Minnesota	6	6									6	6
Missouri	2	3			1	1					3	4
Nebraska	7	9									7	9
New York					6	11					5	11
Pennsylvania					1	1					1	1
South Dakota	3	3									3	3
Wisconsin	3	3									3	3
Total number of teachers												191

J — Number of junior colleges with teachers having degrees from each group of colleges.

N — Total number of teachers having degrees from each group of colleges.

Experience and Tenure of Instructors

Table 5 compares the amount and type of experience which junior college teachers have had. Thirty-seven, or 19.2 per cent, of the junior college teachers have had some experience in rural schools. The median for these teachers' rural experience is 2.08 years. Forty, or 20.8 per cent, have had a median teaching experience in the grades of 2.83 years. High school teaching has been the principal experience of the junior college teachers before entering the junior college work. One hundred thirty-eight teachers, or 75.3 per cent of those reported, have had a median experience of 4.88 years in high school teaching. At the college level 90 per cent of the instructors have held positions which combine college teaching with high school teaching. One hundred seventy-three teachers have a median of 5.32 years experience in positions requiring both high school and junior college teaching. Sixty teachers have taught in colleges or junior colleges where high school teaching was not required and

TABLE 5

Comparison of the Amount and Type of Junior College Teachers' Experience

Years Experience	Total Experience of Junior College Teachers	Number of Teachers with Given Type of Experience				
		Rural	Grade	High School	High Schol and Junior College	Junior College or College**
1	7	11	8	17	32	14
2	6	13	11	9	20	11
3	7	3	3	17	17	7
4	8	3	4	21	6	7
5	9	3	5	13	14	3
6	7	1	3	11	11	2
7	8	1	1	14	22	3
8	13	1		7	12	2
9	11	1	2	5	13	5
10	16			6	17	2
11	9			2	2	1
12	11		1	7	3	1
13	8			1	1	
14	10			1	1	1
15	7		1	2		
16	6			2	1	
17	3					1
18	5				1	
19	4		1			
20	2			1		
21	3					
22	3					
23	2			1		
24	3					
25	3			1		
More than 25	12					
Total	183*	37	40	138	173	60
Medians	10.47	2.08	2.83	4.88	5.32	3.21

* Information from one college not received.

** Junior college or college teaching positions exclusive of those combined with high school teaching.

their median experience in such teaching is 3.21 years. Ten of these sixty have had no experience other than college teaching. These ten teachers have a median experience in the college field of six years. The median total experience of junior college teachers, including each type as indicated above, is 10.47 years.

Miss Martens (13, p. 407) reported that the median years of previous experience for 554 junior college instructors in California was 10.8 years. According to a study (35, p. 146) made in 1930 of

teaching personnel in Iowa, the median experience of 180 high school teachers holding master's degrees was eleven years.

The length of tenure of junior college teachers as indicated by the following tabulation is somewhat longer than it is for high

Years of Experience	Number of Teachers	
	Present System	Present Junior College
1	36	38
2	26	27
3	13	16
4	6	6
5	13	16
6	16	17
7	18	22
8	13	9
9	11	12
10	13	18
11	5	3
12	1	1
13	3	2
14	3	1
15	1	
16	1	1
17	4	1
18	1	1
19		
20	1	
22	1	
23	1	
25	1	
27	1	
31	1	
46	1	
Totals	191	191
Medians	5.53	5.19

school teachers. The median tenure of teachers in the Iowa public junior colleges in 1936-1937 was 5.19 years, but the median length of time those teachers have been in the present school system is slightly longer, 5.53 years. Thus they have taught in the junior college for one-third of a year less than in the school system. In 1928-1929 the median tenure of 178 high school teachers holding master's degrees was four years (35, p. 149).

Scholastic Training of Instructors

In 1936-1937 there were 228 instructors in the Iowa public junior colleges. Of this number 189 have master's degrees and two have the degree of Doctor of Philosophy. Thirty-eight teachers have only a bachelor's degree, and these are, with one exception, teachers of art, music, physical training, and other nonacademic subjects.

TABLE 6

Major Undergraduate Subjects and Major and Minor Graduate Subjects of Iowa Public Junior College Teachers

Subject	Frequencies in Major Subjects				Frequencies in Graduate Minor Subjects			
	Undergraduate		Graduate		First Minor		Second Minor	
	Number	Median Hours	Number	Median Hours	Number	Median Hours	Number	Median Hours
English	28	33.5	18	31.8	12	14.5	2	11.0
Literature			7	25.0				
Speech	5	28.0	9	25.3	9	10.0	4	10.5
Dramatics					1	10.0		
Social Studies	3	36.8	1	20.0				
History	22	28.8	22	29.8	6	11.5	2	10.5
European History			1	20.0	4	15.5	1	10.0
American History			4	31.0	4	10.7		
English History			1	20.0				
Sociology	1	26.0	3	25.0	1	14.0	2	10.5
Political Science	4	24.5	4	49.5	35	12.8	2	10.5
Science	7	40.0						
Chemistry	18	37.5	16	37.5	10	16.5	2	10.0
Physics	4	22.0	6	24.3	6	10.5		
Bacteriology			1	20.0	2	10.5		
Biology	3	33.0	2	53.5	2	12.5		
Botany	2	32.5	6	31.0	1	18.0		
Zoology			2	21.0	8	16.0		
Human Physiology							1	10.0
Geology					1	10.0		
Geography					1	10.0		
Mathematics	26	30.2	15	23.0	11	10.5	3	14.0
French	13	31.3	15	24.0	7	11.3	1	12.0
German	6	32.5	5	30.0	3	17.0		
Spanish					3	33.0		
Latin	6	28.0					1	15.0
Bible	1	96.0			2	10.5		
Education	18	25.5	29	27.5	18	10.5	10	45.5
Elementary Administration			2	35.0				
Elementary Supervision			1	24.0	1	20.0		
Psychology	1	24.0	2	24.0	23	12.3	6	13.0
Philosophy	1	40.0					2	14.5
Commerce	1	33.0	3	29.0	1	16.0		
Economics	4	32.5	1	60.0	5	13.0	8	10.4
Agriculture	1	34.0						
Industrial Arts	2	44.5	3	25.0	1	15.0		
Engineering							1	15.0
Physical Education	3	34.0	1	34.0				
Music	1	30.0						
Law			1	28.0	1	30.0		
Educational Personnel					1	15.0		
Art	1	42.0						
Totals	181		181		160		49	

Nearly the same proportion, 84 per cent, had master's degrees in 1930-1931, but there has been an increase of more than two teachers per college with this degree, which is quite significant from the standpoint of the adequacy of the junior college program offered.

In Table 6 is shown the list of academic subjects which teachers in the Iowa public junior colleges are qualified to teach under the standards set up by the Intercollegiate Standing Committee. The figures in the table are not given in percentages because it is more satisfactory to read the total number of teachers in each field and make a direct comparison of these numbers with the total number of public junior colleges (twenty-seven). The median number of semester hours credit in the graduate major for the 181 teachers is 28.1. The median number of semester hours credit in minor subjects, of 159 teachers reporting, is 12.5.

Of the 181 teachers who indicated their majors in both graduate and undergraduate work, 100 had the same major in both cases, while an additional twenty-four had undergraduate and graduate majors which were in the same field. Of the 160 teachers who indicated a graduate minor, twenty minored in their undergraduate major subject, while an additional fifty-nine minored in the same field. Fifty teachers indicated that they had enough hours in a third graduate subject to teach that subject in college. Five of these subjects were the same as the teacher's undergraduate major and nineteen were in the same field as that major. It would appear from this analysis that at least half of the junior college teachers, those who majored in the same subject in both undergraduate and graduate work, are quite well prepared to teach in that subject.

The difficulty in the small junior colleges is the impossibility of having a teacher for each subject, even when high school and junior college teaching are combined. The standard of the committee which covers the requirements for teachers of academic subjects states that the teacher should wherever possible teach in the subject of his graduate major. If teaching is done outside of this subject ten hours of graduate work are required as preparation. Of the 191 academic teachers in the Iowa public junior colleges, 146 teach, as one of their junior college subjects, their graduate major. Eighty-one of these teach their graduate major only; thirty-eight teach other subjects in closely related fields, for example, chemistry and another science, history and another social science, English and speech, education and psychology, German and French. Twenty-

seven teach subjects in other than fields closely related to their graduate major. Of the 45 instructors who do not teach in the graduate major, 12 teach in closely related fields, and 33 teach in fields not closely related to their graduate major.

The following analysis has been made of the teaching combinations of individual teachers in order to determine, somewhat, the extent of the problem mentioned above:

1. Fourteen teachers are instructing in three different subjects in the junior college. Six of these have combinations of European history, American history, American government, and economics. Examples of other combinations are: French, German, and English; English, sociology, and American government; French, American history, and economics.

2. Sixty-seven teach two-subject combinations. Ten of these teach English and speech. Generally the English teaching includes both composition and literature. Nine have combinations in the field of science, such as physics and chemistry, chemistry and biology, or physiology and biology. Fourteen combinations are in the field of the social studies. Psychology is combined with nine different subjects: English, speech, education, mathematics, zoology, economics, sociology, French, and German.

3. One hundred ten teachers give college instruction in only one field. Seventeen of these teach mathematics, 15 chemistry, 14 French, 11 English, 20 in either education or psychology, and 33 in 20 other subjects.

4. One hundred fifty-six of the 191 instructors teach subjects in the high school as well as in the junior college. Six of them teach three different high school subjects, 24 teach two high school subjects, and 126 teach only one subject in the high school. The subject most commonly taught in the high school by college teachers is English. The second in frequency is mathematics, and the third is science.

Teaching Load

The teaching load of the Iowa public junior college staff as measured in hours taught per week is analyzed in Table 7. One hour of

TABLE 7

Teaching Load of Iowa Public Junior College Teachers Showing Proportion of Time Spent in High School Teaching

Number of Teachers	Hours per Week in Junior College	Hours per Week in High School	Per Cent of Time in High School	High School Load in Terms of College Hours	Total Load in Terms of College Hours
2	2	0	00.0	0.0	2.0
1	2	15	88.2	12.0	14.0
2	2	18	90.0	14.4	16.4

4	3	0	00.0	0.0	3.0
2	3	5	62.5	4.0	7.0
1	3	7	70.0	5.6	8.6
3	3	10	76.9	8.0	11.0
5	3	15	72.0	15.0	15.0
3	4	0	00.0	0.0	4.0
5	4	10	71.5	8.0	12.0
2	4	12	75.0	9.6	13.6
7	4	15	79.0	12.0	16.0
1	4	18	81.8	14.4	18.4
2	5	0	00.0	0.0	5.0
1	5	5	50.0	9.0	9.0
3	5	10	66.7	8.0	13.0
17	5	15	75.0	12.0	17.0
2	6	5	45.5	4.0	10.0
6	6	10	62.5	8.0	14.0
4	6	15	71.5	12.0	18.0
3	7	5	41.7	4.0	11.0
3	7	10	39.0	8.0	15.0
1	8	0	00.0	0.0	8.0
4	8	5	38.4	4.0	12.0
31	8	10	55.6	8.0	16.0
2	8	12	60.0	9.6	17.6
1	9	0	00.0	0.0	9.0
3	9	5	35.7	4.0	13.0
9	9	10	52.6	8.0	17.0
2	10	0	00.0	0.0	10.0
4	10	5	33.3	4.0	14.0
1	10	7	41.1	5.6	15.6
12	10	10	50.0	8.0	18.0
3	11	0	00.0	0.0	11.0
7	11	5	31.2	4.0	15.0
1	11	8	42.0	6.4	17.4
1	11	10	47.6	8.0	19.0
3	12	0	00.0	0.0	12.0
5	12	5	29.4	4.0	16.0
1	12	10	45.5	8.0	20.0
2	13	5	27.8	4.0	17.0
3	14	0	00.0	0.0	14.0
2	14	5	26.3	4.0	16.0
5	15	0	00.0	0.0	15.0
2	15	5	25.0	4.0	19.0
1	15	7	31.8	5.6	20.6
1	16	0	00.0	0.0	16.0
1	16	5	23.8	4.4	20.0
1	18	0	00.0	0.0	18.0
1	19	0	00.0	0.0	19.0
2	20	0	00.0	0.0	20.0
1	21	0	00.0	0.0	21.0

high school teaching has been counted as four-fifths of an hour of college instruction. The table has been arranged so that the actual number of hours can be distinguished while the combined load has been figured on the above basis. The median load of 15.7 hours per week is somewhat heavier than that reported by Morris (37, p. 41 ff.) for the instructors in California public junior colleges. He reports a median of 15 hours per week with a range of 12 to 20. The range of teaching hours in Iowa varies considerably more than this because of teaching done by administrators.

A teaching load from two to ten or twelve hours can be taken as an indication of individuals who have relatively heavy administrative or other extra duties. In all the colleges where the dean is not the high school principal or superintendent he is an instructor, and in several the principal or the superintendent teaches one or more junior college classes.

Teaching is done in high schools by 81.5 per cent of all the Iowa public junior college instructors. Thirty-five teachers do not teach in high school, 42 teach one class, 79 teach two classes, and 37 teach three classes. The proportion of teaching time in the high school for this group varies from 23.8 per cent to 90 per cent of the total classroom teaching load. The median time spent in high school teaching by the total group of junior college instructors is 53.5 per cent. The 191 instructors teach 3,115 classes per week and 50.2 per cent of this number are high school classes. These figures include administrators who teach one or more college classes but no high school classes. Blezek found that, in 1925-1926, Iowa public junior college teachers spent slightly more of their time in the junior college, but as has been indicated, the total number of junior college teachers per college has increased which would explain the larger percentage of time these instructors are now spending with high school classes.

Until 1935 the North Central Association of Colleges and Secondary Schools did not approve of college instructors doing any teaching in the high school. After the report of the Committee on the Revision of Standards, there was a change in this policy. The former standard (Number 12: Secondary Schools) read:

> A college should not maintain a secondary school as part of its college organization except for training school purposes.

In a report by George F. Zook and M. E. Haggerty (56, p. 73) the new attitude is expressed in the following words:

> The North Central standard has always been interpreted as meaning the separation of a junior college from high school work as to organization, administration, faculty, students, buildings, libraries, and laboratories. While there was doubtless some reason in earlier days to attempt to elevate the quality of college work by defining it more clearly and organizing it more definitely, yet we have now learned, particularly with the advent of the junior colleges, that the complete separation of junior college and high school work may be very uneconomical.

And later in the same volume (p. 138):

> Through the absence of the requirement of fifteen units for entrance to college, we shall at last extricate ourselves also from the extremely uncomfortable and utterly indefensible position of compelling school systems containing junior colleges to separate the junior college from the high school in faculty, students, buildings, laboratories, etc.

None of the Iowa public junior colleges, except Mason City, have applied for admission to the North Central Association. One of the reasons for the failure of Iowa public junior colleges to meet the membership requirements of this accrediting body is that they would not then be permitted to use the junior college teachers in high school classes. The high schools with which junior colleges are associated are required to maintain membership in the North Central Association.

Salaries of Junior College Teachers

From the annual reports of the Iowa public junior colleges for the year 1930-1931, Van Gordon (49, p. 113) made an analysis of the salaries of the teachers in these institutions. The summary of the salaries paid the classroom instructor at that time is shown below, together with the same measures for the year 1936-1937.

	1930-1931		1936-1937	
Point Measures	Men	Women	Men	Women
Low	1,500	1,260	1,197	1,100
First Quartile	1,825	1,566	1,372	1,293
Median	1,938	1,758	1,600	1,392
Third Quartile	2,250	1,937	1,826	1,586
High	2,950	2,400	2,760	2,025

For men, the median salary is $438 less than it was in 1930-1931; for women this decrease is $208. Salaries of public junior college teachers are being returned to former levels at about the same rate as for teachers in elementary and secondary schools.

It would not be accurate to compare the salaries of junior college deans with the figures reported by Van Gordon, since he did not differentiate between principals and superintendents who were acting as deans and the deans who spend their entire time with the junior college. Seven superintendents teach one or more subjects in the junior college and five of these act as deans. Only five reported salaries, of which the low was $2,640 and the high $3,200. The median salary of these five superintendents was $2,800. Of six high school principals who teach one or more classes in the junior college, two act as deans. The low salary of this group was $1,640, the high $2,600, and the median $2,007. Nineteen of the twenty deans who are spending their entire time in the junior colleges reported their salaries. The low salary for this group was $1,650, the high $2,600, and the median $1,900.

Medians for salaries of men teachers in the high schools of Iowa for the year 1936-1937 range from $1,179 in towns of 1,000 to 1,999 to $1,809 in cities of 15,000 to 29,999; for women the range is from $1,018 to $1,492. In cities of the size of the average junior college city, 5,000 to 9,999, the median salary for men is $1,518, and for women $1,209. (40, p. 558.)

Junior College Curricula

The average number of academic teachers in the public junior colleges of Iowa, including the superintendents and high school principals who teach, is 7.0 and the range is from 5 to 12. This situation does not permit extensive curricular offerings. Each college must provide a teacher in each of these subjects it finds most essential to its program. Having determined the objective of the institution and planned the curriculum which is suitable to achieve these objectives, the college must attempt to obtain those teachers who are prepared to teach the separate subjects of that curriculum.

Standard III as set out by the Intercollegiate Standing Committee (Appendix, p. 125) reads:

> A junior college should provide college courses in at least the following fields: English, foreign languages, mathematics, physical or natural science, and social science. The number and character of these courses should be such as to provide proper preparation for subsequent college work.

As stated in Chapter III the purpose for which the Committee was set up was to pass upon the acceptance of credits from the junior colleges. This standard, as stated, assures students who enroll

that they can obtain the work required by senior colleges. The rule does not imply that junior colleges shall not offer subjects beyond those which prepare for subsequent college work, but that the required courses must be provided before the addition of courses having other objectives are added. The size of the Iowa public junior college precludes the addition of such courses beyond the preparatory curriculum.

Therefore, in practice, the objective of the Iowa public junior colleges has been to meet the requirement for admission to senior colleges. They have limited their offerings largely to the list of subjects found in the curricula of the freshman and sophomore year at the State University of Iowa. From this list they have selected those which could be most conveniently taught in their institution.

A few of the colleges have been able to offer certain courses outside of this narrow range. Education courses have been offered for those who desire to teach. Commerce subjects of a collegiate grade have been added in four instances, while many of the colleges permit students to register in high school commercial classes without credit. Where this is done the student must reduce his college load proportionately.

The curricular offerings in the Iowa public junior colleges are listed in Table 8 with the number of colleges offering each subject and the number of hours of credit given. Composition and rhetoric, English literature, principles of speech and first-year mathematics are the only subjects which all twenty-seven colleges offer. Of these, first-year English is the only one in which the number of semester hours credit given is the same for all colleges. The typical number of semester hours credit for English is six per year, for speech two per year, and for first-year mathematics eight. Thirteen subjects are offered by twenty or more colleges (approximately three-fourths), and only one additional subject by as many as half of the colleges. Of the fifty subjects listed in this table, twenty-six are offered by less than five colleges and thirty-six by less than half of them.

The only definite attempt to offer a course organized on the general education plan has been made at Centerville in their course in exploratory science. The difficulty encountered in any attempt to give courses of this type is to find teachers capable of doing justice to such courses. In order to teach a combined science course, for instance, a major in physics or chemistry is not sufficient.

TABLE 8

NUMBER OF COLLEGES OFFERING, ACCORDING TO THEIR CATALOGUES, A GIVEN NUMBER OF HOURS OF CREDIT IN CERTAIN SUBJECTS

Subject	Hours of Credit Offered										Total Number of Colleges
	10	9	8	7	6	5	4	3	2	1	
Composition and Rhetoric					27*						27
English Literature			2		25*						27
American Literature							1	1			2
Modern Drama								1			1
Shakespeare								1	1		2
English Novel									1		1
Principles of Speech							3		24		27
Advanced Speech							1		2		3
Play Production					2		1		2		5
Debate									2		2
Interpretative Reading									2		2
History of Europe	1		19		6						26
U. S. History			13		10						23
Industrial History of the U. S.								1			1
American Government			5		10	1	6	1			23
Political Parties							2				2
Comparative Government							2				2
Economics			3		6	1	1	1			12
Sociology					2		2	2			6
Psychology			1		14		3	2			20
Psychology (Educ.)							3	7	3		13
Chemistry (1st year)	4		20**		2						26
Chemistry (2nd year)	2		10		2						14
Chemistry (Other Courses)	1		1		1						3
Biology (General)	1		10								11
Botany			1								1
Human Physiology					1						1
Zoology					5						5

TABLE 8 — *Continued*

Subject	Hours of Credit Offered										Total Number of Colleges
	10	9	8	7	6	5	4	3	2	1	
Physics	5		2								7
Non-technical Physics			1								1
Geology			2								2
Exploratory Science	1										1
Mathematics (1st year)	8	1	18***								27
Mathematics (Calculus)	5		13								18
French (1st year)	1		19		4						24
French (2nd year)	1		17		6						24
French (3rd year)			1				2	1	1		5
German (1st year)			5		2						7
German (2nd year)			2		3						5
Spanish (1st year)			2								2
Spanish (2nd year)			1								1
Education	2	2	5	2							16****
Music Courses							1			1	2
Bible							1				1
Engineering Drawing				1	1	1					3
Accounting	1				2						3
Business Organization and Combination						1					1
Commercial Law					1						1
Economic Geography					1						1
Marketing							1				1

* Two colleges teach "Literature and Writing" for two years.

** Two colleges provide for separate classes for those who have had high school chemistry in addition to regular first year chemistry.

*** One college provides a class for those having only two years of high school mathematics and one for those having three years of high school mathematics.

**** Five colleges offer more than 10 hours of education: Ellsworth and Creston offer 33 hours.

Recently the course in first- and second-year English at the State University of Iowa has been revised so that it is more in line with the general or cultural education plan for the junior college years. This new course, called "Literature and the Art of Writing," has been adopted by two of the junior colleges, Centerville and Ellsworth. Sheldon Junior College has added a subject to its curriculum by means of a correspondence course with the University of Iowa. The students from this college who have credit for American government have obtained that credit by this method.

Two public junior colleges, Creston and Ellsworth, are accredited by the Iowa State Board of Educational Examiners as qualified to offer the teacher training curriculum which leads to the Iowa standard elementary certificate. Students who take two years of work in junior college, including ten semester hours of education, are able to secure the first grade uniform county certificate without examination. This certificate entitles the holder to teach in any rural school in Iowa or in the grades of any city school not maintaining a normal training department. The sixteen schools listed in Table 8 which offer education courses, including Creston and Ellsworth, all offer the work leading to this certificate.

Only four schools to date, Burlington, Waukon, Maquoketa, and Estherville, have attempted to offer commerce work, the principal course in which is accounting, but the new catalogue issued by Creston Junior College indicates that this school anticipates the introduction of accounting, secretarial science, and economics next year. Economics is at present offered by twelve public junior colleges.

The change from year to year in the subjects offered in the junior colleges is relatively small. An analysis was made of the subjects actually taken by the students who have graduated and the results are reported below:

Subject	Per Cent of Students for Whom Grades Were Reported: Before 1932	Per Cent of Students for Whom Grades Were Reported: After 1931	Typical Number of Hours Offered	Number of Colleges In Which Subject Was Taken
Number of Cases	1282	2211		
Composition and Rhetoric	99.2	99.5	6	27
English Literature	88.4	87.5	6	27
American Literature	4.5	1.7	4	2
Modern Drama	4.3	4.6	3	1
Shakespeare	10.9	4.5	3	1
English Readings	.9		2	1
English Novel	6.9	.7	2	2
Principles of Speech	72.6	92.8	2	27
Advanced Speech	5.2	6.3	2	9
Play Production	3.7	5.3	4	3
Debate	.4	.9	2	2
Interpretative Reading		.6	2	1
History of Europe	72.7	73.4	8	26
United States History	46.1	69.3	8	24
English History	2.1	1.1	4	1
Industrial History of the United States		3.3	6	2
American Government	59.5	75.0	6	26
Political Parties		1.3	4	1
Comparative Government		2.3	4	4
International Relations		.6	4	1
Economics	27.8	25.9	6	12
Sociology	13.2	10.8	3	6
Psychology	58.5	74.5	6	26
Psychology (Educ.)	1.1	6.5	3	6
Chemistry (1st year)	60.2	70.3	8	26
Chemistry (2nd year)	20.0	21.8	8	18
Chemistry (Other courses)	2.1	4.7	6	4
Botany		1.3	8	1
Biology	18.9	27.8	8	13
Zoology	4.9	10.0	8	4
Human Physiology	2.2	4.8	6	2
Entomology	.3	1.9	4	2
Physics	10.8	12.3	10	9
Physiography	.8		10	1
Geology	1.8	.8	10	1
Agriculture	.2		10	1
Exploratory Science		2.6	10	1
Mathematics (1st year)	39.5	48.9	8	27
Mathematics (Calculus)	27.1	18.8	8	23
French (1st year)	71.2	67.0	8	27
French (2nd year)	61.9	60.7	8	27
French (3rd year)	3.8	6.3	4	8
German (1st year)	3.1	9.1	8	6
German (2nd year)		3.7	8	4

Spanish (1st year)	3.7	1.8	8	3
Spanish (2nd year)	1.7		8	1
Music Courses	3.5		2	2
Bible	6.3	3.0	4	1
Engineering Drawing	3.5	4.4	2	7
Accounting		2.4	6	3
Business Organization and Combination		.6	4	1
Community Resources		.4	4	1
Principles of Geography		.4	2	2
Marketing		1.1	4	2
Corporation Finance		.5	4	1
Physical Education (1st year)	42.9	48.0	1	18
Physical Education (2nd year)	33.1	36.9	1	17
History of Education	3.7	5.3	3	4
Introduction to Education	1.8	2.7	2	2
Principles of Education	6.1	4.1	2	4
Elementary Education	4.6	7.5	5	5
Elementary School Management	2.9	9.1	3	6
Methods in Education	3.1	11.8	3	8
Observation and Practice Teaching	.9	3.5	5	4
Tests and Measurements	.2	2.7	2	2
Special Subject Methods—				
Public School Music	3.0	1.7	3	6
Art	2.7		2	1
Physiology and Hygiene	.8		2	1
Arithmetic	.2	.2	3	2
Geography	.4	.7	3	2
Elementary Science	.6	.8	2	2
Reading, Literature, and Spelling	.4		3	2
History, Citizenship, and Health	.4		3	2

Column one indicates the actual per cent of the 1,282 students graduating before 1932 who took each subject, and column two the per cent of the 2,211 graduating since that time. The per cent given does not always indicate the number of graduates who received credit in the given subject since students who took the subject were counted whether their grade was failing or passing. The first year of English, composition and rhetoric, is required in each of the colleges, but a number of students, according to the records, were permitted to take another course in English in place of this subject. There was no record on which did not appear at least one course in English.

Seven subjects, English composition and rhetoric, English literature, speech, history of Europe, American government, psychology, and chemistry one, were found on the records of 70 per cent or more of the graduates since 1931. Three additional subjects, United States history, French one, and French two, were found on more than 50 per cent of the records; five additional subjects, economics, biology, first-year mathematics, first- and second-year physical edu-

cation, on more than 25 per cent; six additional subjects, sociology, chemistry two, zoology, physics, calculus, and methods in education, on more than 10 per cent of the records.

That the Iowa public junior college is entirely too small to offer more than a single curriculum is indicated by the results obtained when an analysis was made of the subjects taken by transfer and nontransfer graduates. For this study all those who graduated after 1931 were selected and, after dividing these into transfers and nontransfers, a curriculum count was made. The results are reported in Table 9. This table lists all subjects which have been offered by four or more colleges during the five-year period.

In all twenty-seven junior colleges 96 to 100 per cent of both transfer and nontransfer graduates took first-year English. For nontransfer graduates the per cent of students taking second-year English is from 51 per cent to 100 per cent. For transfer graduates the range is not quite so large.

No general statement can be made concerning the percentages presented in Table 9 other than the very evident fact that the two groups of students have taken almost identical courses. Where 96 to 100 per cent of the graduates of certain colleges have taken a given course, this is evidence that those colleges require students to enroll for that subject. Other high percentages will generally indicate that although the course is not required of all, most students must take it because of the small number of electives. Subjects having been taken by a smaller per cent of the students in given colleges can in general be considered as elective courses.

The Iowa public junior colleges with small enrollments, few teachers, and narrow curricula, are serving but a small proportion of the young people in their respective areas. The pattern of the curricula has been that of the first two years of the Liberal Arts College at the University. The quality of teaching has been equal to that of most of the teaching done at this level in other institutions. In order that the future of this institution may have promise the staff should be trained for junior college teaching. They must receive a vision of the service the junior college can justly be expected to render the youth in the area of the several colleges. They must understand the problems of youth and be able to guide their students into an understanding of the economic and social world. Simply changing the names of a few courses will not bring this about. A competent and enthusiastic instructor, teaching the present curricu-

TABLE 9

NUMBER OF COLLEGES FOR WHICH A GIVEN PER CENT OF GRADUATES HAVE RECEIVED GRADES FOR CERTAIN SUBJECTS

N — Nontransfers
T — Transfers

Subject		Percentage of Graduates											
		100–96	95–91	90–81	80–71	70–61	60–51	50–41	40–31	30–21	20–11	10–1	0
Composition and Rhetoric	N	27											0
	T	27											0
English Literature	N	8	8	6	2	2	1						0
	T	9	6	11	1								0
Speech (1st year)	N	9	3	5	6	2	1						0
	T	10	4	8	3	1							0
Advanced Speech	N							1	1	3	4	1	18
	T							1	1	2	3	2	18
Psychology	N	3	4	4	7	3		2		1	2		1
	T	2	3	5	5	3	3		1	1	3		1
European History	N	2	3	7	6	5	1	1	1				1
	T	2	1	8	4	4	3	1	2	1			1
American History	N			8	5	6	3	2					3
	T		1	6	6	3	5	2	1				3
American Government	N	4	4	4	5	2	1	4	1	1			1
	T	5	3	4	3	3	3	3	1	1			1
Sociology	N			1				1		3	1		21
	T			1					2	2	1		21
Economics	N			1	1		1	2	4	1	2		15
	T			1	1	1	2	3		2	1	1	15
Chemistry (1st year)	N			8	4	2	7	3	1	1			1
	T		1	4	11	4	4	1	1				1
Chemistry (2nd year)	N							2	2	4	9	3	7
	T							1	4	8	6		7
Chemistry (Other Courses)	N						3				1	3	23
	T										2	2	23

TABLE 9 — *Continued*

Subject		100–96	95–91	90–81	80–71	70–61	60–51	50–41	40–31	30–21	20–11	10–1	0
Physics	N								2	3	3		19
	T								2	5	1		19
Biology	N				2	2	4	1	1	1		1	15
	T				2		4	2	1	1		2	15
Zoology	N				1	1				2			23
	T					1	1			1	1		23
Mathematics (1st year)	N			1	1	2	9	3	3	6	2		0
	T		1	1	4	6	4	4	4	2	1		0
Mathematics (Calculus)	N							1	2	5	4	9	5
	T							2	3	5	8	5	4
French (1st year)	N	3	6	3	3	3	4	2	1	1		1	0
	T	2	2	4	6	4	5	3				1	0
French (2nd year)	N	1	1	4	1	4	4	5	4	1	2	1	0
	T		2	4	3	1	5	5	5	1	1		0
French (3rd year)	N				1				1	2		5	18
	T					1	2				2	4	18
German (1st year)	N			1					1	2		2	21
	T			1					2	1		2	21
German (2nd year)	N							1			1	2	23
	T							1			2	1	23
Introduction to Education	N					1	1	1–	10			3	20
	T						1	1	1	1		1	22
Methods of Education	N				1	2	1	2		1	2	1	17
	T						1		1	2	2	2	19
Elementary School Management	N					1	1	3	1		1	1	20
	T							1	2		3	2	17
Educational Psychology	N						1			4	2	1	19
	T								2		2	2	21
Physical Education (1st year)	N	4	2	4	1	1	1		2	1	2	1	8
	T	4	3	2	1			3		1	3	1	9
Physical Education (2nd year)	N		2	2	2	2	2	1	2		1	2	11
	T	1	2	1	4	2			1	2	1	3	10

lum, will come nearer to a solution of the problem of the curriculum than will any attempt to present an impressive array of courses which might only jeopardize the quality of work. The curriculum must be kept within the range of local resources.

CHAPTER VI

THE TESTING PROGRAM

In order to obtain a describable relationship between the quality of students and the quality of work done in the various public junior colleges, it was decided to give three tests to the finishing students in all the colleges under approximately equal circumstances and at the same time. The tests were chosen on the following basis: (1) One subject, English, is required of all students. For that reason is was deemed advisable to select an English correctness test, upon the assumption that this phase of the English course would be most uniformly taught. (2) The second test, a widely used test in the social studies, was selected: first, because it included a series of subjects which would have been taken by most of the public junior college students; second, because it was a phase of education which would be more common to the students through their general reading; and third, because it has been so often spoken of as the type of course most essential to the general curriculum suited to the junior college years. (3) The third test chosen was a Thurstone psychological examination. This test was given for the purpose of describing the general level of scholastic ability in the public junior college population.

The three tests used in these subjects were selected because of the availability of comparable test scores. All three tests have been given at the State University of Iowa: two in sixty colleges, and the English test in certain independent secondary schools. The English and social studies tests were the 1935 editions of the American Council Sophomore Tests, the English Test (Series 2), and the social science section of the General Culture Test, which had been administered to 4,679 sophomores in sixty colleges in various sections of the United States. In addition to this advantage the tests were used at the State University of Iowa as initial tests for beginning juniors entering the teacher preparatory courses.

The psychological test was a special selection of items made at the State University of Iowa from the Thurstone Psychological Examination for the purpose of ranking the students enrolled in education courses with regard to mental ability. While there are

no national norms on this test, it has been administered to a large enough group of juniors so that comparisons could be made and levels of ability could be distinguished from the raw scores.

On the first of April the tests were sent to all of the public junior colleges with specific directions for administration. The procedure followed was one with which most of the colleges were quite familiar through their participation in the Iowa Every Pupil High School Testing Program. It was not possible to have all tests given on the same day because of administration difficulties in certain colleges. However, only four schools asked for the privilege of using a day other than the one set. Two of these gave the test on the preceding Thursday, one gave the tests on Tuesday, a day later, and the fourth was not able to administer the tests until a month later. One college declined to give the tests at all.

TABLE 10

MEAN SCORES OF IOWA PUBLIC JUNIOR COLLEGES ARRANGED IN THE ORDER OF THE ABILITY OF THE STUDENTS AS MEASURED BY THE PSYCHOLOGICAL EXAMINATION

College	Psychological Examination	English Correctness Usage	Spelling	Vocabulary	Total	Social Studies
A	136.23	79.32	41.32	44.52	165.16	64.65
B	129.70	84.37	40.04	43.26	167.67	58.93
C	125.23	100.38	47.85	55.08	203.31	78.08
D	124.81	62.25	35.69	39.00	136.94	37.69
E	121.38	76.69	37.65	48.65	163.00	64.79
F	115.64	79.43	41.29	49.21	169.93	76.71
G	114.60	71.67	34.53	42.33	148.53	48.33
H	114.29	73.71	38.71	50.61	163.04	73.25
I	112.40	73.40	39.50	50.70	163.60	74.56
J	111.76	88.52	43.76	51.00	183.29	76.62
K	107.20	61.50	33.35	42.10	137.05	51.05
L	105.30	73.22	36.57	48.09	157.89	68.08
M	105.13	95.00	45.79	50.21	190.79	51.36
N	104.80	80.12	37.04	44.08	161.24	60.92
O	100.30	74.80	39.30	43.30	157.40	51.70
P	100.19	68.73	35.73	46.67	151.13	62.17
Q	100.13	67.06	36.63	37.56	141.25	50.00
R	99.50	72.00	36.00	32.00	140.00	68.00
S	96.78	71.44	36.61	37.83	145.89	61.67
T	89.72	63.06	34.67	37.72	135.44	44.00
Z	87.83	64.20	34.53	42.70	141.73	50.58
U	87.67	71.16	36.00	39.00	146.17	63.17
V	85.65	65.10	35.12	32.29	133.35	37.94
W	85.41	70.12	34.35	39.29	143.76	58.29
X	84.08	62.62	32.15	34.77	129.54	51.38
Y	82.00	82.27	38.27	36.27	157.27	55.18
A. M.	107.22	75.67	37.34	44.10	155.96	60.29
S. D.	30.65	26.09	10.78	15.76	45.82	29.15

The tests were all returned to the University where they were corrected and analyzed. Table 10 gives the arithmetic means for each of the tests and for each of the colleges. The scores are arranged in order of the ability of the students in the college as indicated by the results on the psychological examinations.

The following tabulation gives the Z-score values of these means.

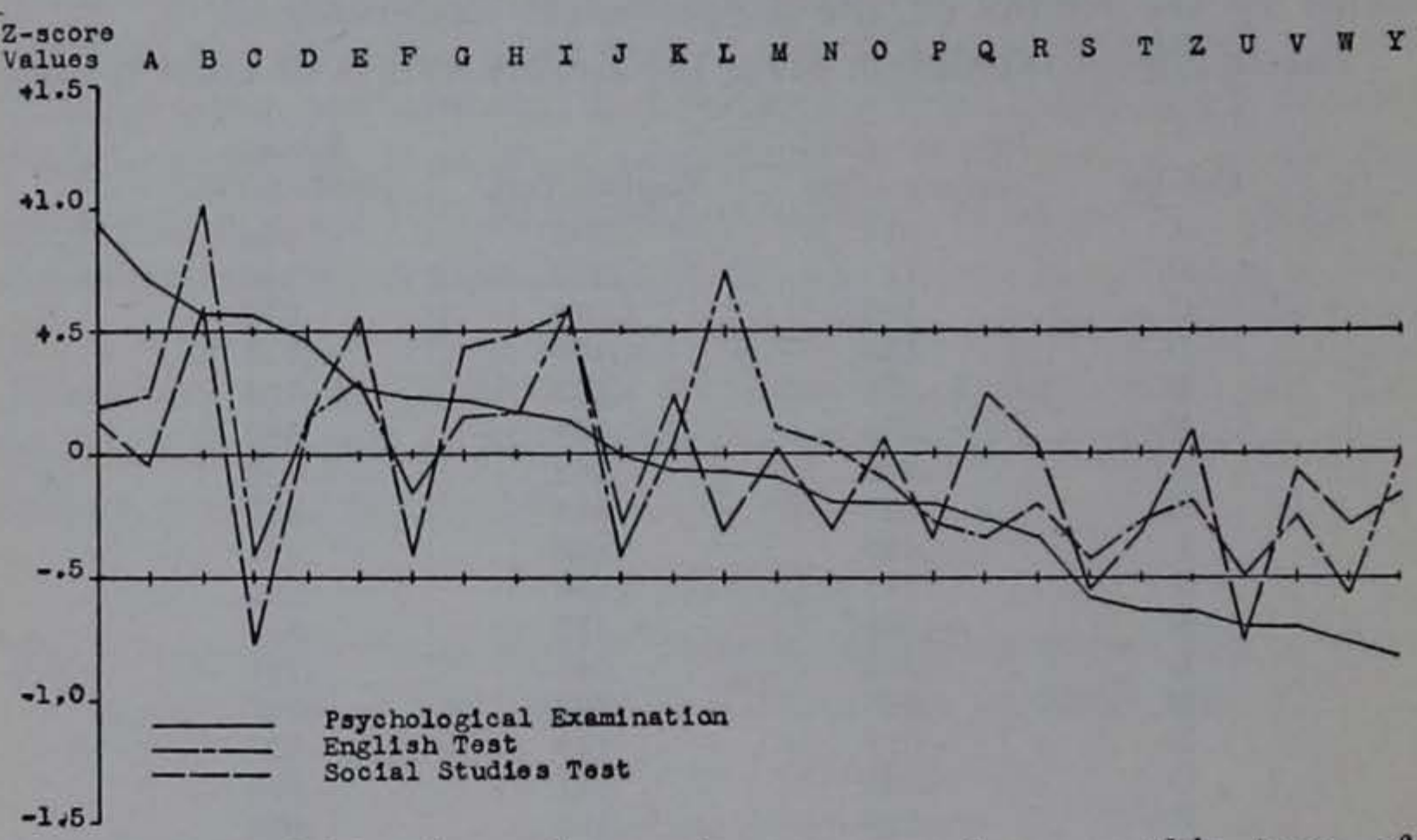
College	Psychological Examination	English Test	Social Studies Test
A	.946	.200	.149
B	.733	.255	−.046
C	.587	1.033	.610
D	.573	−.415	−.775
E	.461	.153	.154
F	.274	.304	.563
G	.240	−.162	−.410
H	.230	.154	.444
I	.169	.166	.489
J	.148	.596	.560
K	−.0007	−.412	−.317
L	−.062	.043	.267
M	−.068	.760	−.307
N	−.079	.115	.021
O	−.225	.031	−.294
P	−.229	−.105	.064
Q	−.231	−.321	−.353
R	−.251	−.348	.264
S	−.340	−.219	.047
T	−.570	−.447	−.558
U	−.637	−.213	.098
V	−.703	−.493	−.766
W	−.711	−.266	−.068
X	−.754	−.576	−.305
Y	−.822	.028	−.175
Z	−.632	−.310	−.333

Figure 4 which follows is prepared from this set of Z-scores and shows the relationships for each college between the three sets of scores. The middle horizontal line on this graph is, in the case of each test, the mean score. The distances above or below this middle line are the relative distances above or below the mean in terms of standard deviations. Thus the mean score on the psychological examination for college "A" is .946 standard deviations above the mean. The mean English score for that college is .2 standard deviations above the mean and its mean social studies score is .149 standard deviations above the mean.

The number of cases for each college is so small that it is not safe to generalize concerning results. It is reasonable to expect, however, if the measures used are valid, that colleges who measure high on the psychological examination should be doing better work in

FIGURE 4

Z-score Values of the Mean Scores for Individual Junior Colleges on the Three Tests



the content fields than those who measure low on this type of test. If a college has students of high ability, teaching results should prove superior.

It is seen from this graph that a number of colleges are doing work superior to that which might be expected from the scores made on the test of ability. On the other hand, colleges "A", "B", "D", and "K" seem to be doing work considerably below their ability level.

Groups for Whom Comparable Data Were Available

In the 1935 College Sophomore Testing Program conducted by the American Council on Education (2), the total number of colleges making returns on the English and General Culture tests was sixty. These sixty colleges were supposed to have tested all of their students classified as sophomores. However, the committee presents the material with the following warning:

> The answers received are not complete enough to warrant more than a presumption that the pupils tested represent a random sampling of the classes in most of the participating colleges. These uncertainties regarding the class and institutional representativeness of the groups tested and the variety of combinations of tests used in each institution should be kept in mind in interpreting the data presented below.

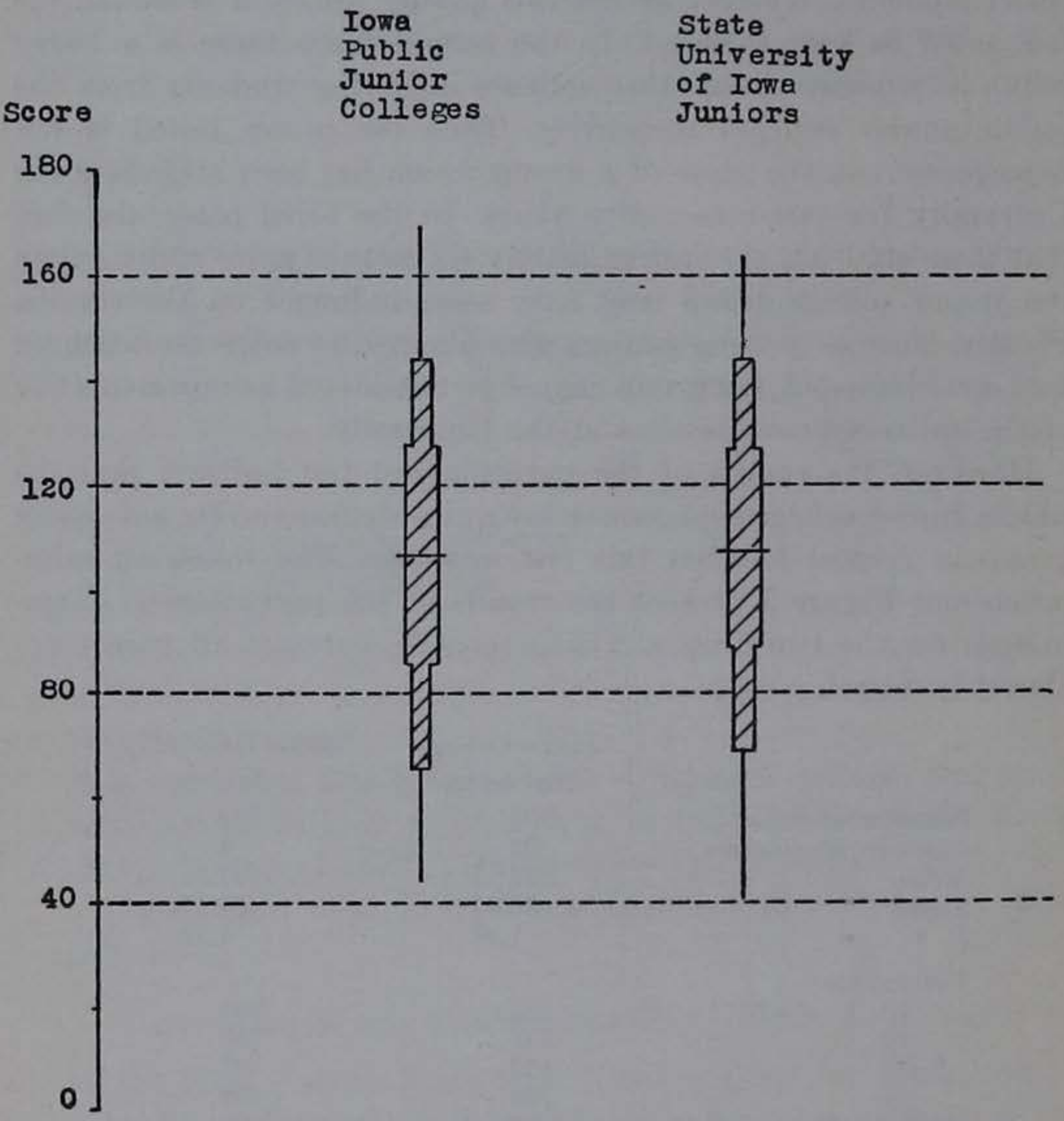
A description of the group at the State University of Iowa is also essential to interpret correctly the comparisons made with that group. In the first place, there is a certain mortality at the end of the sophomore year which is assumed to cause a selection of the better students. Whether or not this quality selection is actual, the fact must be kept in mind. In the second place there is a heavy influx of students from other colleges including students from the public junior colleges themselves. Thus the group tested is not homogeneous in the sense of a group which has been attending the University for two consecutive years. In the third place, the fact that these students are approximately six months more mature than the junior college group may have some influence on the results. Finally, since only those juniors who planned to enter the teaching field were included, the group cannot be considered as representative of the entire sophomore class at the University.

However, the results of the psychological test indicate that the public junior college sophomores are quite similar to this university group in respect to what this test measures. The following tabulation and Figure 5 present the results of the psychological examination for the two groups. The percentile scores at all points are almost identical.

	Junior College Sophomores	State University Juniors
Number of cases	506	589
Number of colleges	26	1
Mean	107.22	107.78
Sigma	30.65	29.65
P. E.	1.36	1.22
Percentiles		
98	170	165
90	145	145
75	127	127
50	108	109
25	86	89
10	67	70
2	45	41

FIGURE 5

Distribution of Scores of Public Junior College Sophomores and Entering Juniors in the Teacher Training Courses at the State University of Iowa on the Psychological Examination



The wide portion of each bar represents the range of scores of the middle half of each group. The narrow parts extend to the tenth and ninetieth percentiles. The lines at the end extend down to the lowest and up to the highest scores.

Table 11 and Figure 6 present a comparison of the scores made in English by students in the Iowa public junior colleges with scores made by juniors at the State University of Iowa and with the national sophomore percentiles. Only the English usage and spelling tests were taken by the University juniors, but in each case their score was above that made by the junior college sophomores.

Except for the scores on the vocabulary test, the Iowa public junior college students made scores in English which are distinctly superior to those of the sixty colleges represented in the national percentiles.

The median score of 2,103 twelfth grade pupils in fifty-three public high schools is slightly below the 25th percentile score of the Iowa public junior colleges, but slightly above the 25th percentile score of the national sophomores. The Iowa public junior college ranking lowest has a mean score slightly above that of the public high school seniors although the lowest college in the national sophomore tests has a median score equal to that of the high school sophomores. The lowest of the Iowa public junior colleges made scores in English which were equivalent to the average of the

TABLE 11

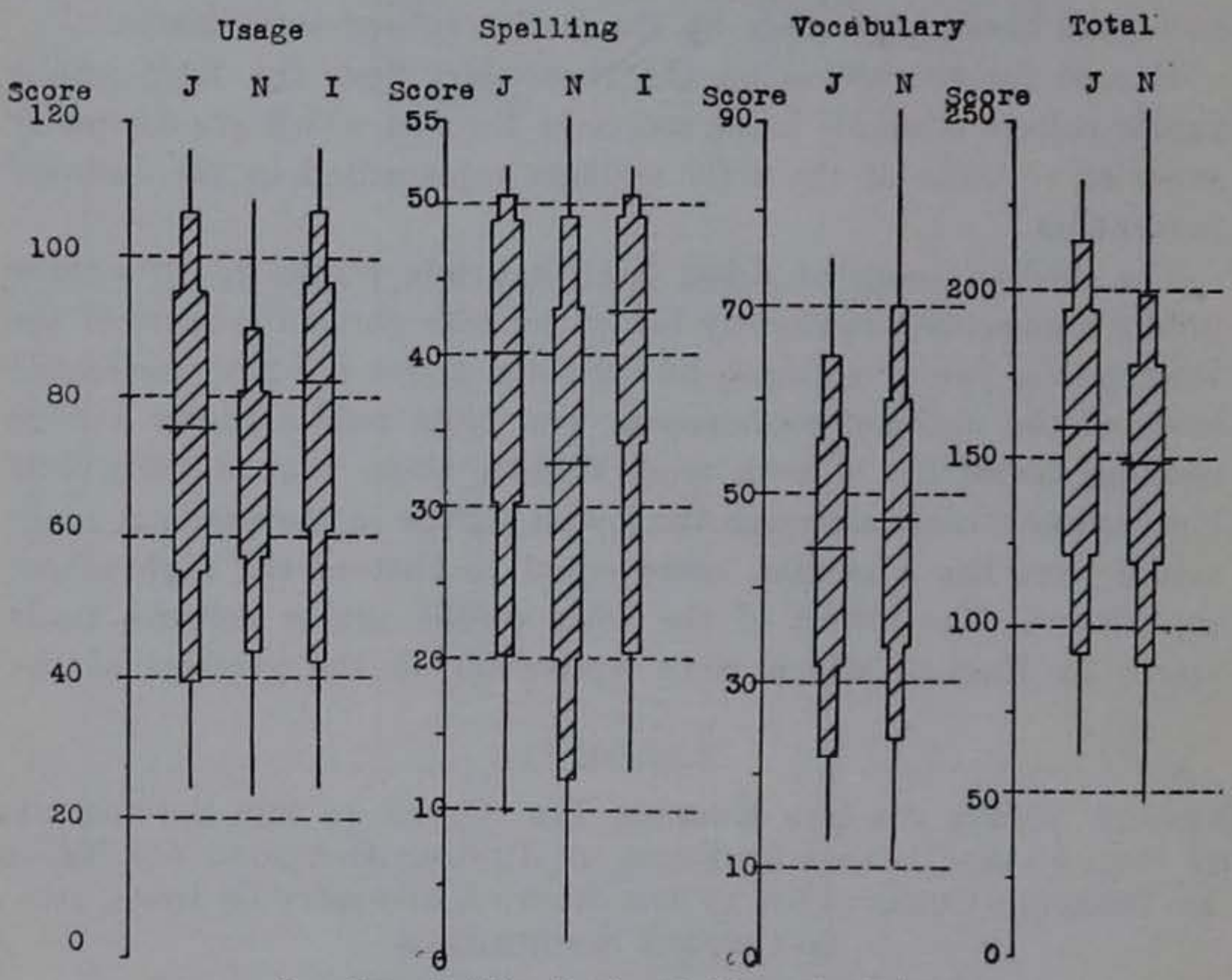
PERCENTILE SCORES FOR THE ENGLISH TEST GIVEN TO THE SOPHOMORES IN THE IOWA PUBLIC JUNIOR COLLEGES, TO JUNIORS ENTERING THE TEACHER-TRAINING CURRICULUM AT THE STATE UNIVERSITY OF IOWA, AND TO COLLEGE SOPHOMORES

	Junior Colleges				State University Juniors		College Sophomores			
	Usage	Spelling	Vocabulary	Total	Usage	Spelling	Usage	Spelling	Vocabulary	Total
Number of cases	503	503	503	503	589	589	4922	4922	4922	4922
Number of colleges	26	26	26	26	1	1	65	65	65	65
A. M.	75.67	37.34	44.10	155.96	77.56	39.90	68.2	31.2	47.1	146.4
S. D.	26.09	10.78	15.76	45.82	23.72	11.18	17.5	13.6	17.4	41.7
P. E.	1.15	.48	.70	2.04	.97	.46	*	*	*	*
Percentiles										
98	115	53	75	234	116	53	98	53	82	222
90	107	51	65	215	107	51	90	49	70	199
75	95	48	57	194	98	49	81	43	60	178
50	76	40	44	159	82	43	70	33	47	149
25	55	30	32	122	61	34	57	20	34	118
10	39	20	23	91	43	21	44	12	24	89
2	24	10	13	61	26	12	29	4	13	58

* Probable errors not reported.

FIGURE 6

Distribution of Achievement on the English Test for the Sophomores in Iowa Public Junior Colleges Compared with the National Sophomore Percentiles and the Achievement of Juniors in Education at the State University of Iowa



J - Iowa Public Junior College Sophomores
N - National Percentiles
I - State University of Iowa Juniors in Education

The wide portion of each bar represents the range of the middle half of each group. The narrow parts extend to the tenth and the ninetieth percentiles. The lines at the ends extend down to the lowest and up to the highest score.

seniors in the public high schools who took this same test, but which were distinctly superior to those of the lowest college which took this test in 1935.

When we turn to social studies, the picture is somewhat different. As is indicated below and in Figure 7, the Iowa public junior col-

	Junior College Sophomores	State University Juniors	College Sophomores
Number of cases	503	271	4,679
Number of colleges	26	1	60
Mean	60.29	73.845	66.7
Sigma	29.15	34.45	31.9
P. E.	1.30	2.09	*
Percentiles			
98	128	172	144
90	101	118	110
75	71	92	86
50	57	69	63
25	38	48	43
10	26	37	29
2	16	21	14

* Probable errors not reported.

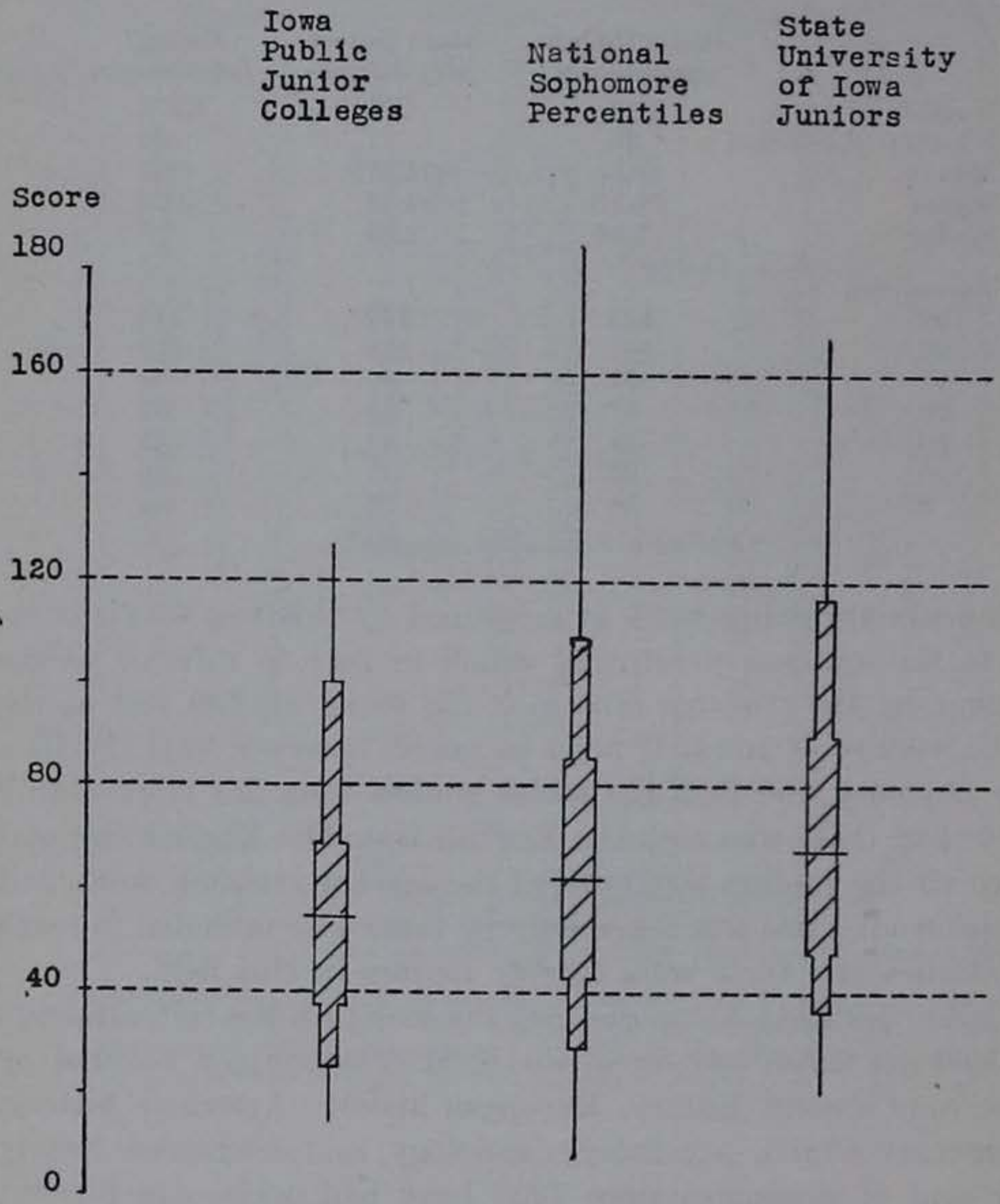
lege students are doing work as measured by this test which is inferior to the national percentile, which in turn is inferior to the work done by the students who took the social studies test at the State University of Iowa. It must be noted, however, that the University students who took the social studies tests are more highly selected than those who took the English test. The English test was given to all the juniors who entered the teacher training work, but the social studies test was taken only by those who intended to teach social studies and these were largely majors in this field.

All junior college sophomores took the social studies test, although a few had not taken courses in this field. The subjects covered by the test were ancient history, European history, American history, contemporary affairs, psychology, sociology, and economics. Nearly 75 per cent of graduates since 1932 have had courses in history, American government, and psychology. Nearly 70 per cent had taken American history and with very few exceptions all had taken either American history or European history. A number of other courses in social studies are also included in the curricula of Iowa public junior colleges.

It may be assumed from these figures that while nearly every student has had contact with one or more of these fields they have had much less training in social studies than have the juniors at the

FIGURE 7

Distribution of Achievement on the Social Studies Test for the Sophomores in Iowa Public Junior Colleges Compared with the National Sophomore Percentiles and the Achievement of Juniors in Education at the State University of Iowa



The wide portion of each bar represents the range of the middle half of each group. The narrow parts extend to the tenth and ninetieth percentiles. The lines at the ends extend down to the lowest and up to the highest score.

University who were largely majors in this field. For this reason the scores made by the public junior college students compare favorably with those made by this group.

Probably the subjects covered in this test are more basic to an education for "life" than most of the subjects offered by the junior colleges and the fact that the standing is lower would point toward the need for improved teaching of the social sciences.

Figures 8, 9, and 10 have been prepared to demonstrate the variability between the individual junior colleges and show two types of variability. The first is the variability of median scores of different colleges, and the second is the more significant variability of scores of students in individual colleges. The differences among colleges are very large, as far as achievement in the fields of English and social studies is concerned and in terms of ability as measured by the psychological examination. In each of the tests taken, however, the variability within any single college is much greater than the difference between the highest and lowest college mean. In these figures the middle horizontal line shows the median of the combined scores of all schools and the other two lines are at the 25th and 75th percentiles of the Iowa public junior college distribution. The percentile scale at the left is based on returns for 503 sophomores from the twenty-seven public junior colleges. Each

FIGURE 8

Variability of Scholastic Aptitude in Iowa Public Junior Colleges as Measured by the Psychological Examination

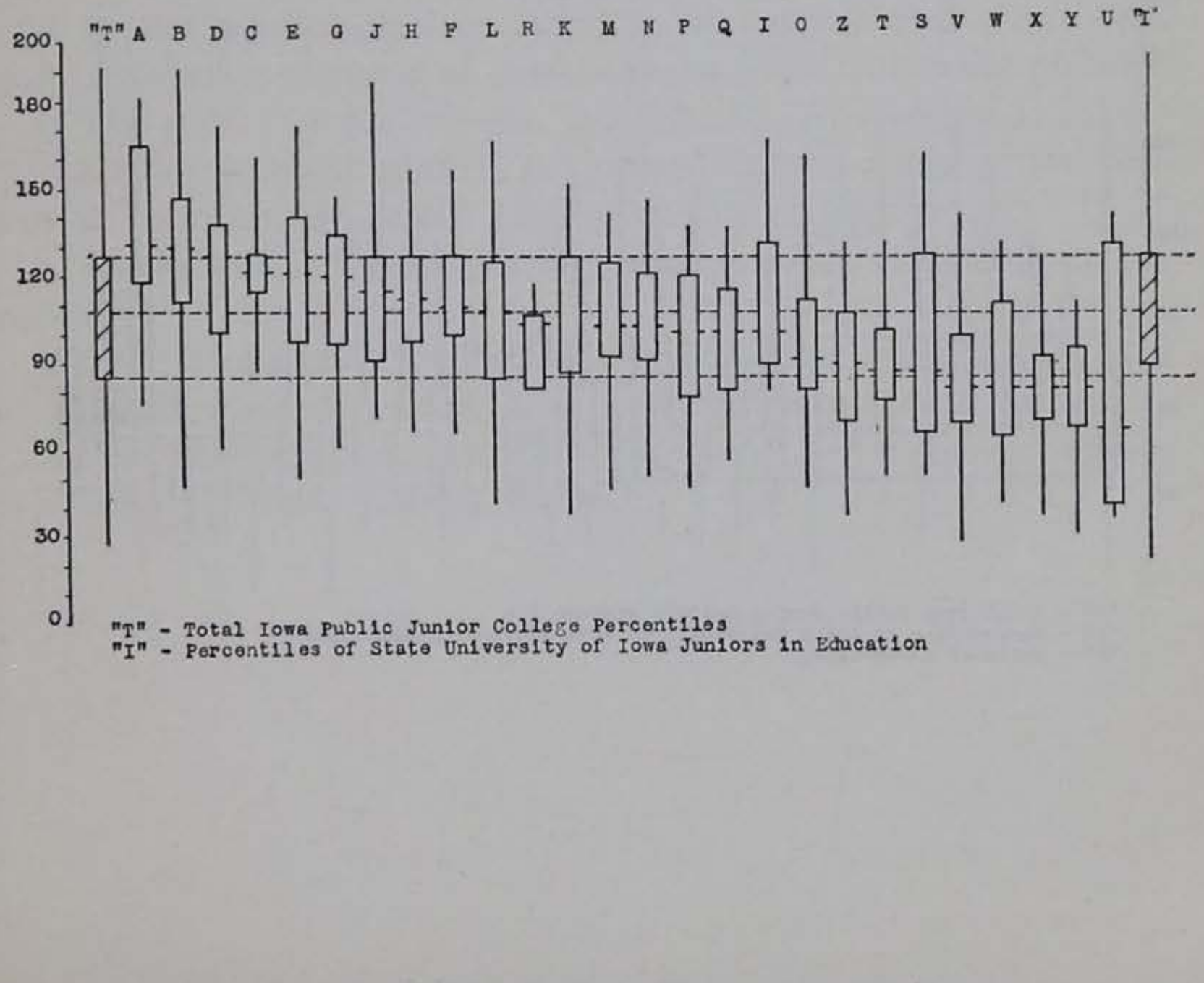
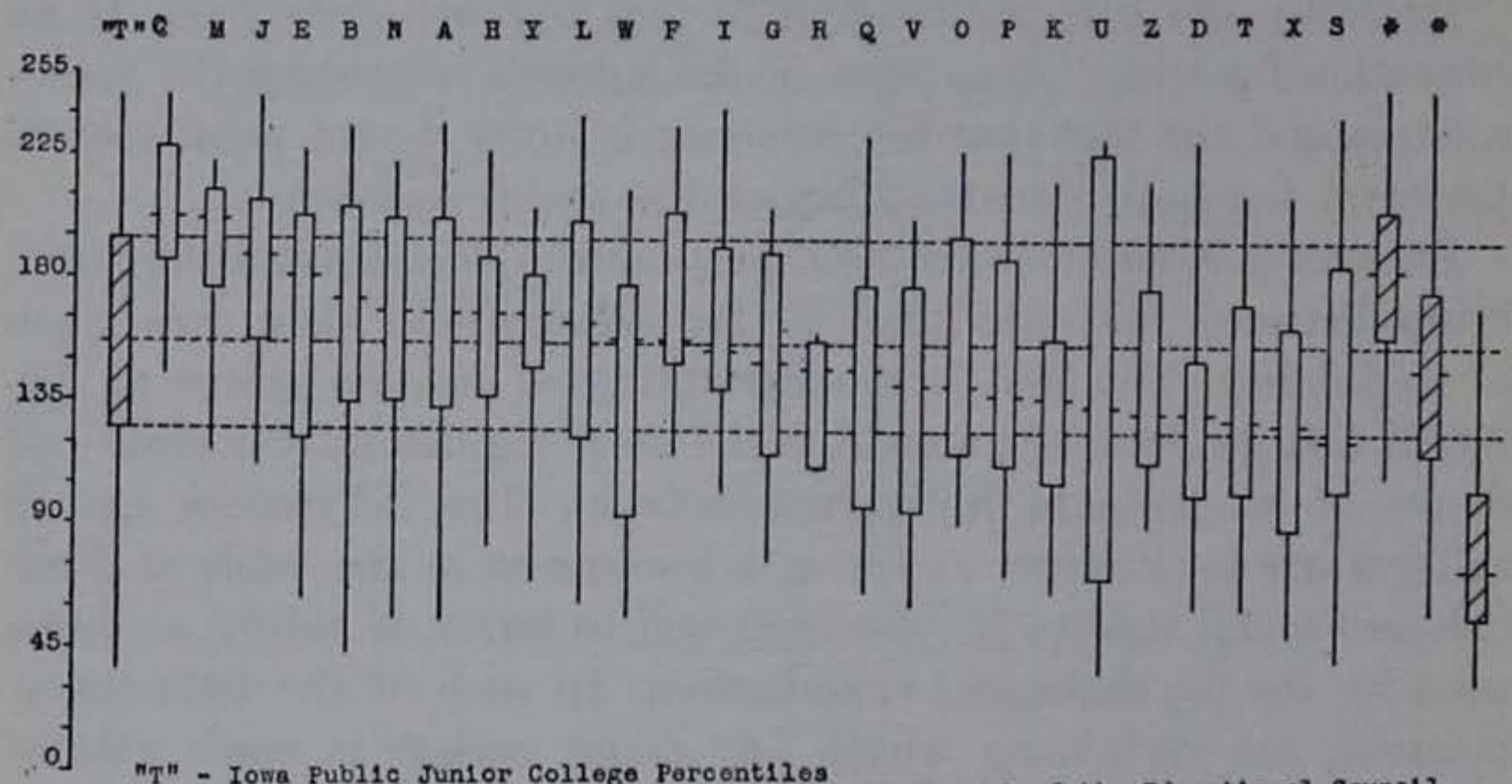


FIGURE 9

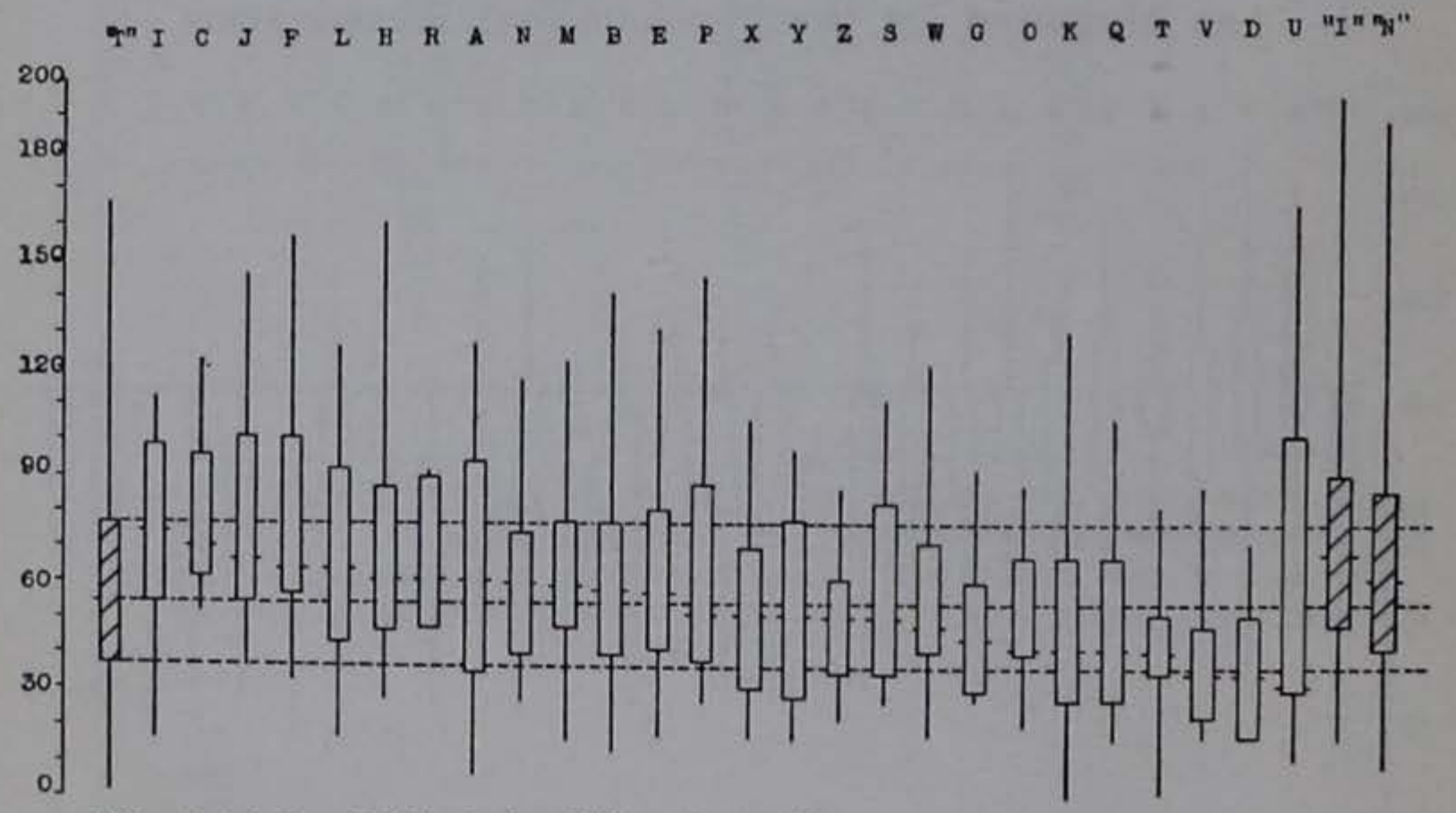
Variability of Achievement in Iowa Public Junior Colleges as Measured by the English Test



"T" - Iowa Public Junior College Percentiles
* Percentiles for three colleges given in the Report of the Educational Council as (1) the college with the highest rank, (2) the college about at the median, and (3) the college with the lowest rank, in the 1935 national testing program.

FIGURE 10

Variability of Achievement in Iowa Public Junior Colleges as Measured by the Social Studies Test



"T" - Total Iowa Public Junior College Percentiles
"I" - Percentiles of State University of Iowa Juniors in Education
"N" - National Percentiles

bar represents an individual college. The wide portion of each bar represents the range of scores of the middle half of the sophomores in each college. The lines extend from the highest score made in each college to the lowest.

Figure 8 has at the right the distribution of Iowa juniors on the psychology examination. The first ten colleges on the graph have mean scores superior to those of the group at the State University. The mean scores of the others are below the mean of the University group. The highest college has a mean at about the 30th percentile of the University juniors. The mean of the lowest college is at the 20th percentile of this group.

On Figure 9, presenting the English results for the individual junior colleges, the three bars at the right represent the range of variability of individual colleges in the national testing program based on returns for 4,922 sophomores from sixty-five colleges who took this test in 1935 (2, p. 15). The spread between these three colleges is much greater than is the spread between the Iowa public junior colleges.

On Figure 10, presenting the social studies results for the individual colleges, the two bars at the right are for the national norms and the State University of Iowa juniors. Their inclusion on this graph is to facilitate comparison of the individual colleges with these two standards.

In conclusion it may be said that the tests have demonstrated the following:

1. The ability of Iowa public junior college sophomores, as measured by the psychological examination, is equal to that of the comparatively selected group of juniors at the State University of Iowa.

2. The public junior colleges, individually, correspond so closely to the Iowa group in ability, but spread from a mean at the 20th percentile to a mean at the 18th percentile of that group.

3. In the two subject fields the same type of variability is apparent.

4. The Iowa public junior colleges are doing work in the field of English which is distinctly superior to the national norms.

5. The work of these institutions in the field of the social studies is slightly below the national norms.

CHAPTER VII

PUBLIC JUNIOR COLLEGE GRADUATES

In Chapter III were presented certain statistical data concerning the junior college graduates. There have been 231 graduating classes, including the classes of the year 1936. Of the 3,650 graduates, 1,942 transferred to other educational institutions. Sixty-two of these took part of their junior college work at other colleges and three were finally eliminated because of insufficient data. One hundred transferred to institutions which were not of senior college grade, leaving 1,777 students who transferred to senior colleges. Sixty-four of the 1,708 nontransfer graduates took part of their junior college work at other colleges and thirty-one were eliminated because of insufficient data. Table 12 shows the distribution of nontransfer graduates by years within the junior colleges and Table 13 gives the same information for the transfer graduates.

Tables 14 and 15 give the proportion of graduates of each sex who continued their formal education and the proportion who did not. The first of these tables divides the total number according to the year of junior college graduation, and the second according to the junior college attended.

Less than half of the Iowa public junior college graduates who transfer to senior colleges are women, but 60 per cent of the ones who do not continue in college are women. An analysis of the items on the questionnaire which refer to occupations of nontransfer graduates indicates that 176 of the 480 women who answered the questionnaire, or 37 per cent, went into teaching. When this factor is taken into consideration, it is surprising that the proportion of women among the nontransfer graduates is not larger.

The per cent of women who have transferred has steadily decreased as the number of colleges has increased and has remained fairly constant since 1932. There has been little change in the per cent of women nontransfers during the entire period.

The proportion of women graduate transfers by colleges varies from 28.6 per cent at Osceola to 71.4 per cent at Red Oak, but there is considerably less variation among the women nontransfer graduates. The proportion of these varies from 40 per cent at Muscatine

TABLE 12

Nontransfer Students — By Years and by Colleges

Town	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	Total
Albia										5	6	8	3	4	9	9	9	53
Bloomfield											7	4	5	7	5	8	0	36
Boone										9	12	6	8	10	2	5	9	61
Britt											6	6	5	9	12	8	9	55
Burlington			1	6	5	5	4	6	11	9	13	4	17	19	15	19	22	156
Centerville													4	7	5	13	10	39
Chariton										1	3	5	3	4	3	8	11	38
Clarinda						4	5	6	5	5	4	15	5	7	3	7	1	67
Creston									19	22	17	18	19	17	19	20	12	163
Eagle Grove											13	5	3	8	3	6	5	43
Elkader												5	4	9	7	9	9	43
Ellsworth											3	15	19	18	10	12	10	87
Emmetsburg													4	7	1	4	3	19
Estherville									9	11	7	9	6	8	6	4	6	66
Fort Dodge							10	3	6	0	4	3	7	11	5	11	10	70
Independence											4	1	4	4	2	3	6	24
Maquoketa										6	7	10	16	11	2	6	10	68
Marshalltown										5	3	1	3	8	10	4	6	40
Mason City	1				1	4	1	3	7	5	7	11	13	14	10	13	12	102
Muscatine												12	3	5	7	10	13	50
Osceola										2	3	6	5	5	4	13	19	57
Red Oak												3	6	15	10	13	15	62
Sheldon									4	4	5	4	3	2	3	6	10	41
Tipton										3	2	1	3	4	5	1	6	25
Washington											1	7	8	4	7	7	11	45
Waukon						2	3	2	3	2	3	5	10	8	9	9	5	61
Webster City									6	7	6	2	5	0	3	5	8	42
Total	1		1	6	6	15	23	20	70	96	136	166	191	225	177	233	247	1613

(Sixty-four took part of their junior college work elsewhere)

Total before 1932 — 540 Total since 1931 — 1073

TABLE 13

Transfer Students — By Years and by Colleges

Town	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	Total
Albia										7	8	17	8	12	11	8	6	77
Bloomfield											7	3	5	7	4	5	0	31
Boone										8	8	8	11	8	11	8	10	72
Britt											3	5	4	1	1	1	2	17
Burlington			10	9	10	15	21	20	17	15	28	25	26	24	26	28	36	310
Centerville													5	5	5	8	3	26
Chariton										6	1	4	3	5	7	3	2	31
Clarinda						10	5	7	5	8	6	8	4	6	11	11	3	84
Creston									15	10	5	11	9	11	6	10	4	81
Eagle Grove											5	1	0	7	9	2	6	30
Elkader												3	2	0	5	4	5	19
Ellsworth											2	3	5	5	9	11	12	47
Emmetsburg												1	7	6	4	4	8	30
Estherville									1	5	6	4	5	8	5	10	3	47
Fort Dodge					1	2	16	10	9	7	12	14	4	22	16	16	13	142
Independence											5	1	4	6	10	5	5	36
Maquoketa										9	9	3	2	5	8	8	9	53
Marshalltown										4	5	4	12	10	11	6	16	68
Mason City	2	4	2	9	3	14	10	9	15	15	23	11	26	29	30	21	15	238
Muscatine												11	7	12	14	13	7	64
Osceola										4	1	2	2	7	4	3	5	28
Red Oak												4	9	15	5	8	3	44
Sheldon									9	8	7	5	6	5	3	6	4	53
Tipton										8	5	1	6	5	8	11	1	45
Washington											6	8	11	10	9	10	13	67
Waukon						10	1	6	6	4	6	4	11	7	8	9	5	77
Webster City									8	6	3	5	8	9	9	5	10	63
Total	2	4	12	18	14	51	53	52	85	124	161	166	202	247	249	234	206	1880

(Sixty-two took part of their junior college work elsewhere)
Total before 1932 — 742; Total since 1931 — 1138

TABLE 14

Number of Men and Women Who Have Graduated from Iowa Public Junior Colleges Listed by Year of Junior College Graduation

	Men and Women Who Have Continued in Senior College			Men and Women Who Have Not Continued in Senior College		
Year	Men	Women	Per cent of Women	Men	Women	Per cent of Women
1920	0	2	100.0	0	1	100.0
1921	0	4	100.0	0	0	00.0
1922	3	9	75.0	1	0	00.0
1923	4	14	78.8	2	4	66.7
1924	4	10	71.5	3	3	50.0
1925	23	28	54.9	6	9	60.0
1926	19	34	64.2	9	14	60.9
1927	17	35	67.3	8	12	60.0
1928	39	46	54.1	27	43	61.5
1929	58	66	53.2	40	56	58.4
1930	69	92	57.1	51	85	62.6
1931	84	82	49.4	60	106	64.0
1932	106	96	47.5	80	111	58.2
1933	147	100	40.5	97	128	57.0
1934	135	114	45.8	69	108	61.2
1935	125	109	46.6	88	145	62.2
1936	112	94	45.6	101	146	59.2
Total	945	935	49.7	642	971	60.2

to 71.8 per cent at Creston. Probably the special teacher-training curriculum at Creston and Ellsworth has considerable influence on the size of the per cents at these two institutions, while Muscatine can be considered as a good example of a junior college that does not offer teacher-training, and this may be one reason for the smaller proportion of women among the nontransfer graduates.

Eells (14, p. 277) assigns two reasons for the success of junior college transfers: (1) better selection, and (2) better instruction. He sees in the fact that the junior college offers "an honorable stopping point" a probability that this institution will act as a "sorting device, a protective sieve, tending to select only the superior student for further university work."

In attempting to obtain a measure of the amount of selection which actually takes place at the end of the junior college course in Iowa, the ability of the transfer group is compared with the ability of the nontransfer group by means of junior college grade point averages. If there is any selection taking place, the junior college students who have the higher grades should be the ones to continue their work and those with lower grades should terminate their college work.

TABLE 15

NUMBER OF MEN AND WOMEN WHO HAVE GRADUATED FROM IOWA PUBLIC JUNIOR COLLEGES AND HAVE CONTINUED THEIR EDUCATION IN A SENIOR COLLEGE AND THOSE WHO HAVE NOT CONTINUED.

	Transfer Graduates			Nontransfer Graduates		
College	Men	Women	Per cent of Women	Men	Women	Per cent of Women
Albia	47	30	39.0	23	30	56.6
Bloomfield	19	12	38.7	18	18	50.0
Boone	44	28	38.9	31	30	49.2
Britt	9	8	47.1	21	34	61.8
Burlington	140	170	54.8	67	89	57.1
Centerville	13	13	50.0	18	21	53.8
Chariton	14	17	54.8	12	26	68.4
Clarinda	35	41	57.3	20	47	70.1
Creston	39	42	51.9	46	117	71.8
Eagle Grove	18	12	40.0	16	27	62.8
Elkader	9	10	52.6	22	21	48.8
Ellsworth	28	19	40.4	27	60	69.0
Emmetsburg	19	11	36.7	11	8	42.1
Estherville	22	25	53.2	24	42	63.6
Fort Dodge	76	66	46.5	23	47	67.1
Independence	19	17	47.2	8	16	66.7
Maquoketa	24	29	54.7	27	41	60.3
Marshalltown	33	35	51.5	16	24	60.0
Mason City	111	127	53.4	48	54	52.9
Muscatine	31	33	51.6	30	20	40.0
Osceola	20	8	28.6	25	32	56.1
Red Oak	17	27	71.4	23	39	62.9
Sheldon	28	25	47.2	13	28	68.3
Tipton	24	21	46.7	9	16	64.0
Washington	36	31	46.3	24	21	46.7
Waukon	40	37	48.1	20	39	66.1
Webster City	28	35	55.6	16	26	61.9
Totals	945	935	49.7	642	971	60.2

Table 16 shows the quartile grade point averages for these two groups and also for a third group, those who have further education in institutions not requiring college work for entrance, e.g., business colleges. The difference in these measures is in favor of the transfer group but is not large. The mean of the transfer group is .17 of a grade point higher than that of the nontransfer group. This would mean that on the average a student who transfers will probably have made a grade point average .17 higher than a student who does not transfer. These averages are illustrated graphically in Figure 11.

Table 17 presents the junior college grades of the two major groups for the first year, the second year, and the average for the two years in junior college, and Figure 12 is a graphic represen-

TABLE 16

JUNIOR COLLEGE GRADE POINT AVERAGES AT GIVEN PERCENTILES FOR THREE GROUPS OF JUNIOR COLLEGE GRADUATES

	Graduates Not Continuing Their Education Beyond Junior College	Graduates Who Went to Schools Not Requiring College Education for Entrance	Graduates Continuing Their Education in Senior College
Number of cases	1607	100	1777
A. M.	2.48	2.55	2.65
S. D.	.64	.59	.66
P. E.	.01	.04	.01
Percentiles			
High	4.00	4.00	4.00
75	2.94	2.96	3.15
50	2.40	2.49	2.59
25	2.00	2.07	2.13
Low	.87	1.20	1.11
Per cent above 3.00 average	23.0	23.0	31.2
Per cent below 2.00 average	23.6	19.0	18.4

TABLE 17

GRADE POINT AVERAGE MEASURES FOR JUNIOR COLLEGE GRADES OF IOWA PUBLIC JUNIOR COLLEGE GRADUATES

	Averages for First Year in Junior College	Averages for Second Year in Junior College	Two-Year Junior College Average
Nontransfer Graduates			
Number of cases	1607	1607	1607
A. M.	2.42	2.53	2.48
S. D.	.67	.69	.64
P. E.	.01	.01	.01
Percentiles			
High	4.00	4.00	4.00
75	2.88	3.03	2.94
50	2.36	2.47	2.40
25	1.93	2.02	2.00
Low	.75	1.00	.87
Transfer Graduates			
Number of cases	1777	1777	1777
A. M.	2.58	2.70	2.65
S. D.	.71	.69	.66
P. E.	.01	.01	.01
Percentiles			
High	4.00	4.00	4.00
75	3.12	3.24	3.15
50	2.56	2.78	2.59
25	2.03	2.19	2.13
Low	.75	.93	1.11

FIGURE 11

Junior College Grade Point Average Measures for Three Groups of Iowa Public Junior College Graduates

(The wide portion of each bar represents the range of the middle half of each group. The lines at the ends extend down to the lowest and up to the highest score.)

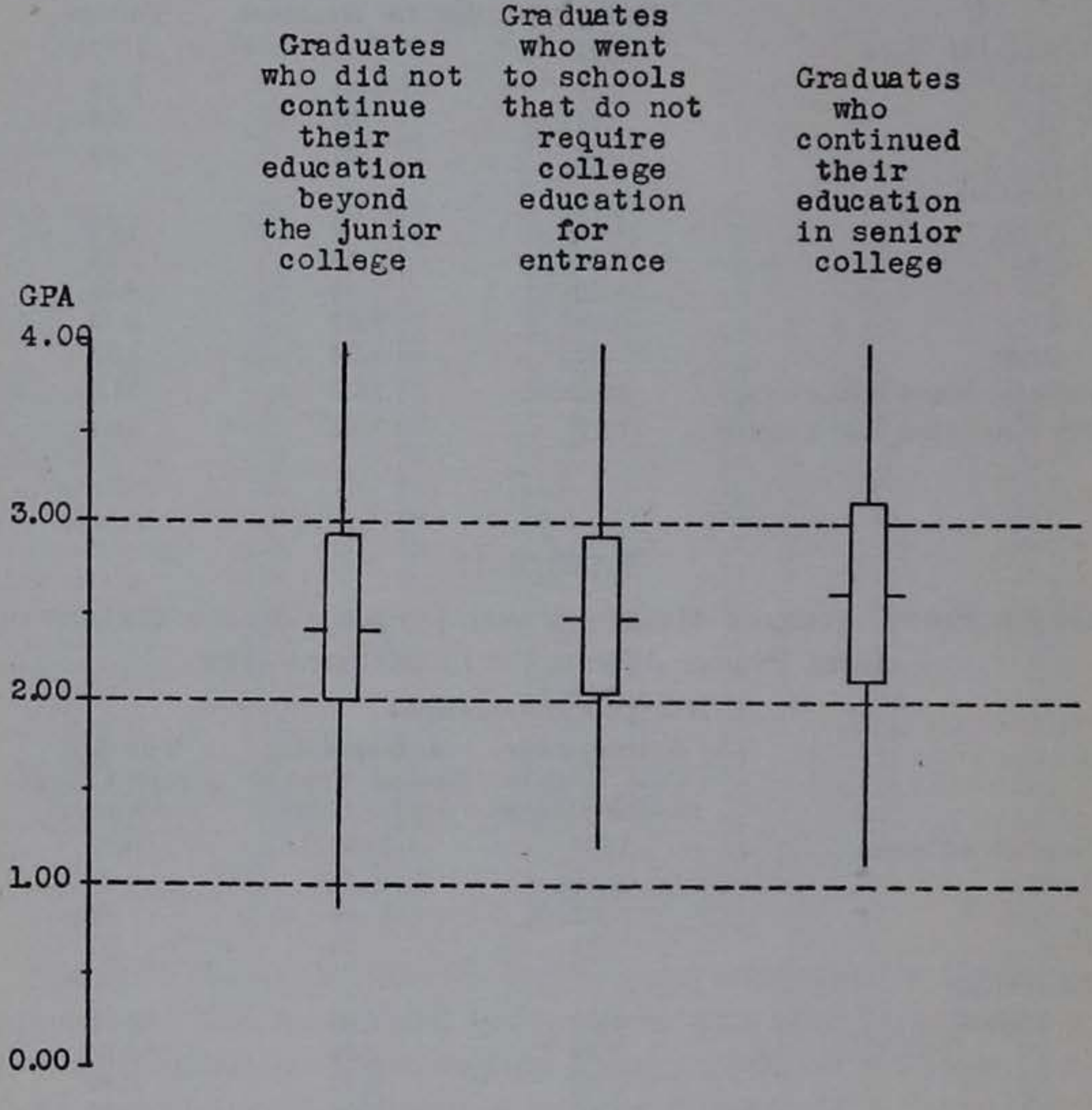
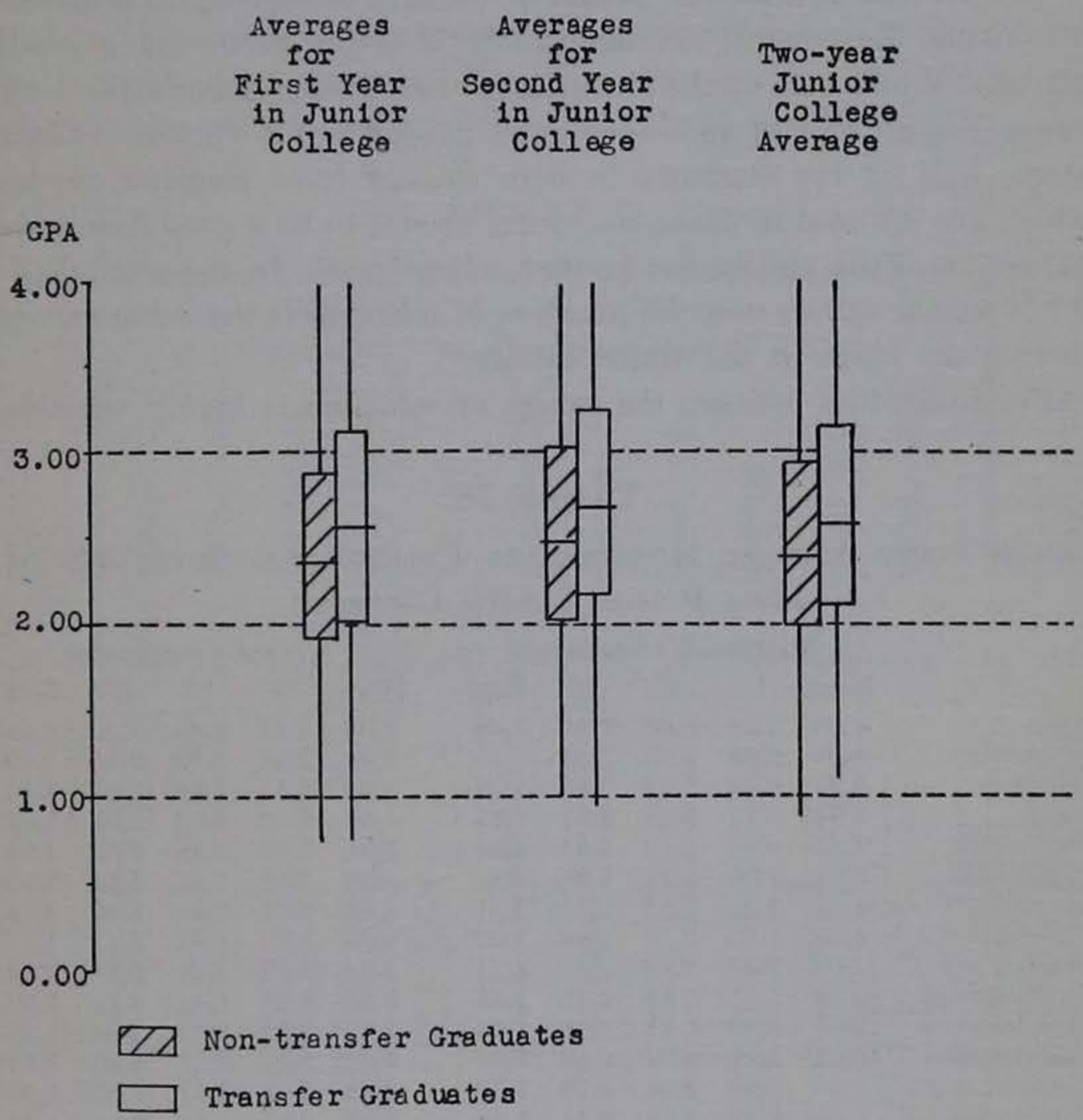


FIGURE 12

Grade Point Average Measures for Public Junior College Grades of Iowa Public Junior College Graduates

(The wide portion of each bar represents the range of the middle half of each group. The lines at the ends extend down to the lowest and up to the highest score.)



tation of this relationship. The standard deviation of the transfer group has become slightly smaller indicating that they are more homogenous the second year, while the standard deviation of the first group has become larger, showing a tendency to spread out more from the mean in the second year than in the first.

The purpose of selection cannot be thought of entirely as a matter of raising the general average of the transfer group by a small amount. While half of the students in both groups have made very commendable grades and have good prospects for further college work, half of the students in both groups have received grades which are low and indicate, assuming grades to be a good index for prediction, little ability for further college work. In the next chapter it will be shown that the problem of selection is not solved, even during the years in the senior college.

For individual colleges the extent of selection is highly variable

TABLE 18

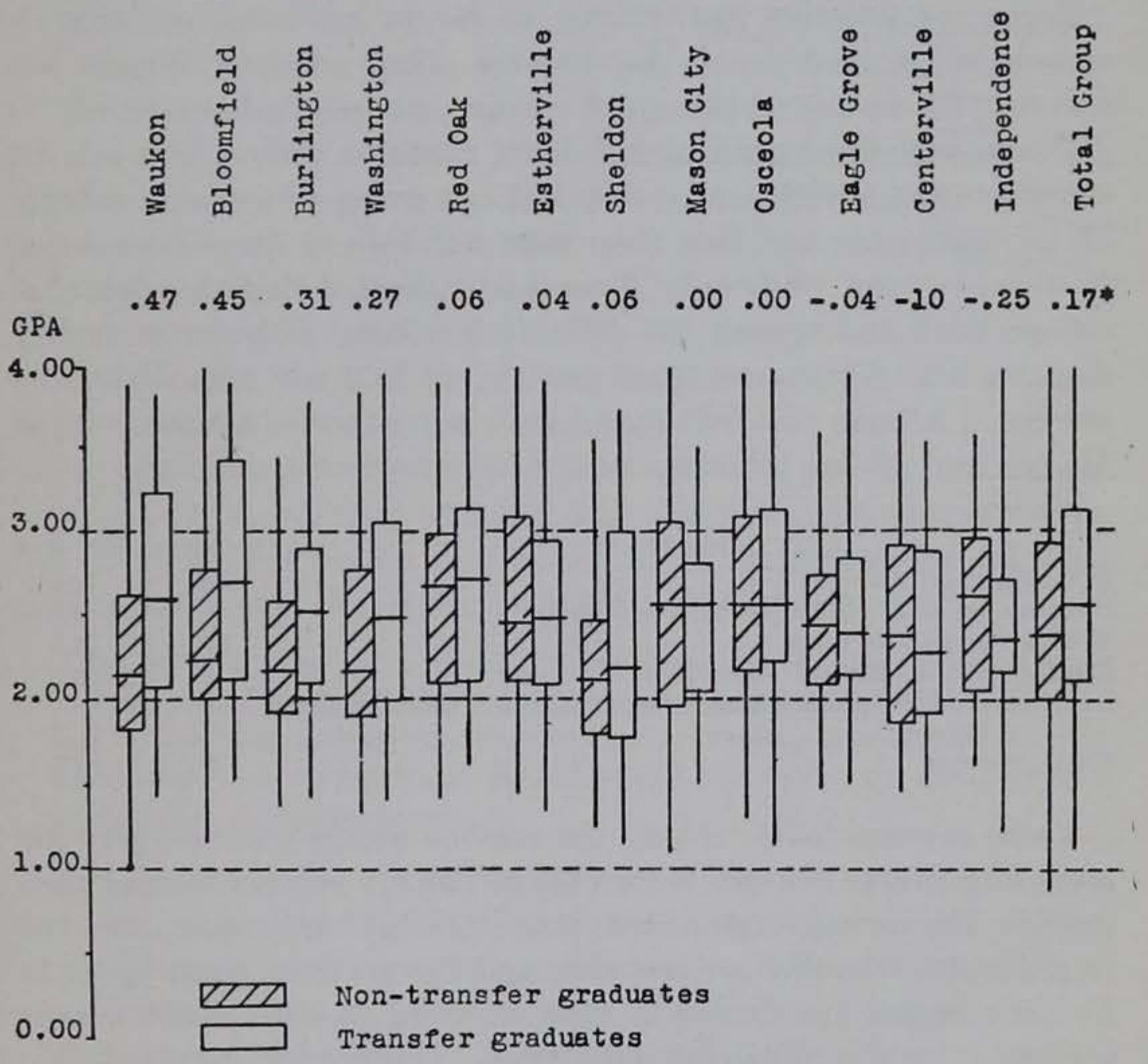
GRADE POINT AVERAGE MEASURES BY COLLEGE FOR GRADUATES OF IOWA PUBLIC JUNIOR COLLEGES

	Nontransfer Graduates					Transfer Graduates				
	High	75	50	25	Low	High	75	50	25	Low
Albia	4.00	3.19	2.60	2.07	1.40	4.00	3.47	2.83	2.40	1.32
Bloomfield	4.00	2.79	2.25	2.02	1.13	3.89	3.45	2.70	2.14	1.49
Boone	3.93	2.74	2.37	1.85	1.25	3.93	3.11	2.64	2.22	1.44
Britt	3.94	3.15	2.38	1.99	1.10	4.00	3.20	2.53	2.07	1.69
Burlington	3.85	2.78	2.18	1.91	1.30	3.94	3.08	2.48	2.02	1.39
Centerville	3.67	2.93	2.37	1.88	1.41	3.52	2.87	2.28	1.89	1.50
Chariton	4.00	3.03	2.56	2.18	1.31	4.00	3.67	2.82	2.45	1.44
Clarinda	4.00	2.79	2.38	1.88	1.07	4.00	3.20	2.63	2.12	1.17
Creston	4.00	2.84	2.38	2.02	1.17	3.94	3.20	2.64	2.19	1.22
Eagle Grove	3.59	2.73	2.44	2.10	1.45	3.95	2.83	2.41	2.15	1.50
Elkader	3.87	2.92	2.41	2.08	1.33	3.57	3.23	2.55	1.94	1.35
Ellsworth	3.91	3.11	2.63	2.16	1.50	4.00	3.27	2.78	2.30	1.63
Emmetsburg	3.40	2.92	2.24	1.79	1.16	3.48	3.03	2.31	1.99	1.22
Estherville	4.00	3.10	2.48	2.14	1.44	3.87	2.95	2.52	2.08	1.36
Fort Dodge	4.00	3.17	2.74	2.13	1.25	4.00	3.22	2.82	2.34	1.42
Independence	3.55	2.98	2.62	2.04	1.61	4.00	2.71	2.37	2.19	1.20
Maquoketa	3.74	3.01	2.49	2.13	1.08	3.90	3.30	2.61	2.29	1.18
Marshalltown	3.84	3.21	2.54	2.24	1.37	4.00	3.28	2.73	2.30	1.11
Mason City	3.94	3.11	2.56	2.16	1.30	4.00	3.11	2.56	2.25	1.11
Muscatine	3.66	2.71	2.21	1.80	1.37	3.84	3.07	2.52	2.08	1.19
Osceola	4.00	3.03	2.58	1.96	1.06	3.51	2.81	2.58	2.07	1.50
Red Oak	3.93	2.97	2.67	2.13	1.40	4.00	3.15	2.73	2.13	1.58
Sheldon	3.56	2.48	2.13	1.79	1.24	3.74	2.98	2.19	1.77	1.17
Tipton	3.79	2.82	2.50	2.22	0.87	4.00	3.32	2.63	2.19	1.41
Washington	3.45	2.60	2.20	1.95	1.35	3.90	2.90	2.53	2.12	1.41
Waukon	3.86	2.60	2.15	1.81	1.06	3.82	3.22	2.62	2.08	1.41
Webster City	3.68	2.67	2.26	2.02	1.24	3.84	3.04	2.53	2.03	1.50

and there is no relationship between the size of the college and this factor. Table 18 shows these measures for all the junior colleges, and Figure 13 is a selection of colleges from this list to show the extremes. In the Waukon, Bloomfield, Burlington, and Washington junior colleges the transfer graduates have grade point averages which are higher than the nontransfer graduates. This indicates that in these colleges the students who transfer have undergone a small measure of selection. For the other colleges the differences between the two groups are slight, or, as indicated by a minus sign,

FIGURE 13

The Differences in Mean Junior College Grade Point Averages for the Graduates Who Transferred and the Graduates Who Did not Transfer from Certain Selected Colleges.



* These figures indicate the differences between the mean grade point averages of transfer and non-transfer graduates.

the nontransfer groups made higher averages. The individual colleges shown in the figure vary from .47 of a grade point in favor of the transfer group at Waukon to a .25 grade point in favor of the nontransfer group at Independence. The difference between the two groups for all of the colleges together is .17 in favor of the transfer graduates. This difference is illustrated by the pair of bars at the right in Figure 13. Three of the colleges, Red Oak, Estherville, and Sheldon, with negligible differences in the averages of the transfer and nontransfer groups within a college but with somewhat larger differences in the averages as between the colleges, are included to show that the actual size of the grade point average itself is not a function of the factor of selection but is rather a function of the marking system in the particular college.

Since this evidence does not support the contention that junior colleges are selective institutions, so far as academic standing is concerned, it is desirable to discover what selective factors are present. By means of the questionnaire, an attempt was made to discover why these graduates did not continue their education. In answer to the question why they did not go on to a senior college, 72 per cent answered that they were not able to do so because of financial reasons, while only .5 per cent indicated that they felt that college work had become too difficult for them. Sickness or family troubles kept 6 per cent from continuing, 14.2 per cent desired to work and 2.3 per cent had no interest in further education. Of the 4.8 per cent giving other reasons, nearly half said marriage.

Reason	Number	Per cent
Financial reasons	538	72.0
Sickness or other difficulty in the family	45	6.0
Wanted to get to work	106	14.2
No interest in further education	17	2.3
I had reached the point where college education was difficult for me	4	.5
Other reasons	36	4.8

These answers follow closely the reasons college students give for attending junior college. Eells (14, p. 217 ff.) reports several such studies. The questionnaire used in the present study was presented to graduates who did not transfer, and the answers given by them to this question are similar to those received in other studies, as is indicated by the following tabulation. Those who answered this question were asked to check the three reasons which were most important in their case.

Reason	Present Study Per cent	Brand's California Study (Eells, 217) Per cent
It was less expensive for me to attend a junior college	68.5	57.2
I intended to go to a college or university after junior college graduation	30.8	55.0
I had an offer of part-time work while attending junior college	30.5	19.1
I would not have gone to college at all had there been no junior college	22.9	
I though I would receive more individual attention	20.8	38.9
I wanted to live at home while taking college work	19.2	2.5
My parents wished me to remain at home	12.9	13.7
I wanted to get a teacher's certificate	11.8	
My parents thought I was too young to go away to college	8.4	12.4

A study of the two preceding tables indicates that the primary reason for attendance at the junior college is that which becomes the chief factor in the selection of those who are to continue their education beyond the junior college. That reason is the financial one.

The above tabulation also reveals the fact that at least 30 per cent of this group of nontransfer graduates expected to continue their education in a college or university. On the other hand, only 23 per cent indicate that they would not have gone to college at all had there been no junior college.

The following tabulation shows the percentages of graduates by colleges, for the years 1932 to 1936, inclusive, who have continued their education. From the median school, 50.9 per cent of the graduates continue and the range of the percentages for individual colleges is from 17.30 to 66.2 per cent. The mean number of transfers for the Iowa public junior colleges is far below that of most of the studies reported by Eells (14, p. 251 ff.).

> In 1926, Thomas gave reports from eleven California junior colleges showing that from 50 to 80 per cent of their graduates had attended higher institutions. The average was 72 per cent. At Chaffey Junior College, Hall found that, over an eight-year period, 74 per cent of the graduates entered institutions of higher learning.

The figures given by McDowell for public junior colleges vary from 80 per cent in 1915 to 67 per cent in 1917. Hanna found that 53 per cent of graduates from public junior colleges entered other institutions. Campbell found that 63 per cent of the graduates of twenty-six public junior colleges transferred. In comparison, the Iowa public junior colleges are in practice terminal to a greater extent than the other institutions here reported. This fact, however,

School	Nontransfer	Transfer	Percentage of Students Who Transfer
Albia	34	45	57.0
Bloomfield	25	21	45.7
Boone	34	48	58.6
Britt	43	9	17.3
Burlington	92	140	60.4
Centerville	37	26	41.3
Chariton	29	20	40.8
Clarinda	23	35	60.4
Creston	87	40	31.5
Eagle Grove	25	24	49.0
Elkader	38	16	29.6
Ellsworth	69	42	37.8
Emmetsburg	19	29	60.5
Estherville	30	31	50.9
Fort Dodge	44	71	61.6
Independence	19	30	61.3
Maquoketa	45	32	41.6
Marshalltown	31	55	64.0
Mason City	62	121	66.2
Muscatine	38	53	58.3
Osceola	46	21	31.4
Red Oak	59	40	40.4
Sheldon	24	24	50.0
Tipton	19	31	62.0
Washington	37	53	59.0
Waukon	41	40	49.5
Webster City	21	41	66.1
Total	1073	1138	51.3
Range			17.3–66.2
Median			50.9
Mean			51.3

is not the result of any selection which takes place. Students who go to the Iowa junior colleges desire to receive the first two years of a college course at as low cost as possible and intend to continue their education. There is little relationship between ability and this intention, since there are as many of low ability who continue in a senior college or desire to do so as there are of high ability. Conversely, there are as many of high ability who do not continue as there are who do. Actually students continue their education because of factors other than ability.

CHAPTER VIII

TRANSFERS FROM PUBLIC JUNIOR COLLEGES

Many studies have been made of the success of junior college graduates who continue their education in senior colleges. Most of these studies show that transfers do as well as, sometimes better than, do the students who had their first two years in the senior college.

In 1928 Eells (14, p. 259) studied a group of 317 graduates of public junior colleges, largely in California, who transferred to Stanford University. In the case of both men and women he found that the junior college transfers made better records than students who took the first two years at Stanford, while in the case of the junior college men the difference was distinctly significant.

A very comprehensive study was made at Berkeley in 1929 by Ruch, Baker, and Ryce (38). In this study the junior college men show an even more striking superiority over the university men than was the case at Stanford. The junior college women, in this study, began with low records, but increased rapidly from semester to semester, finishing almost on a par with the University of California women.

An extensive study was made by Congdon, in 1929 (11, p. 271), at the School of Engineering of the University of Michigan. The weight of cumulative evidence yielded through several different lines of inquiry showed that the public junior college students did better work than the students who had all their training at the University of Michigan.

Gerberich and Kerr (16) made a study of success of transfers at the University of Arkansas with less encouraging results. Their findings are as follows:

> Junior college transfers made much higher grade point averages in the junior colleges than did the comparable group of university entrants in the university.
>
> It is probable that most of this difference results from the difference in junior college and university marking systems.
>
> The transfer students attained grade point averages of 3.43 for their fourth semester and 2.16 for their first semester at the university. In addi-

tion to the difference in marking systems it is probable that the junior college transfers who enter the university as juniors face a period of adjustment comparable to that facing freshmen entrants to college.

The transfer students never for any semester reach as high a level as the comparable university entrants.

The inevitable conclusion seems to be that the difference results from one or several such factors as training, ability, interests, and the like, between the transfer students and the native university students.

In a study recently completed at Rochester Junior College by Kilby (27) the records of 162 transfers to senior colleges between the years 1928 and 1932 were examined. This included all students who attended other institutions for as much as a quarter or a semester and whose record could be secured. In the case of transfers to all institutions except to the University of Minnesota the grade point averages were higher after transfer than before. The grade point average at Rochester for these transfers was 2.33. In other institutions the grade point average was 2.36. This study included all transfers regardless of amount of work completed at Rochester Junior College. The writer felt that the study would show results even more favorable to the junior college if graduates only were taken into consideration.

A careful study was made at the State University of Iowa in 1935 by Jones (25). He made a comparison of the work done in the University by several groups of junior college transfers, including those from the Iowa public junior colleges, with work done by students who had their first two years' work at the University.

The following conclusions concerning transfers who graduate from senior college were presented by Jones and are included at this point as assumptions which may in general be accepted as applying to the transfers of the present study who were graduated from the senior colleges. He concluded:

That all two-year public junior college men and women do slightly better during each of the last four semesters in the University of Iowa than do four-year University of Iowa men and women. The differences were not statistically significant.

That the two-year Iowa public junior college women consistently do better work than the University of Iowa women. The differences were not statistically significant.

Two-year Iowa public junior college men maintain a higher grade point average for the fifth, sixth, and seventh semesters. In the final semester the women surpass the men, the latter doing poorer work than in their first semester in the University. The difference is not statistically significant.

The present study does not attempt to repeat the work of Jones. No attempt has been made to compare the work of the transfers with that of any other group of students. The study of Jones was concerned only with students who had graduated from the University; the present study is not concerned primarily with this group but rather includes all students who transfer. Thirty-two colleges are represented in the group of institutions to which these people transferred, and from which records of work done were received. These institutions are shown by state and by type of institution in Table 19. The first column under each type of institution indicates the number of colleges in the group and the second column the number of transfers to these colleges. Table 20 presents the same

TABLE 19

DISTRIBUTION OF JUNIOR COLLEGE GRADUATE TRANSFERS FOR WHOM RECORDS OF SENIOR COLLEGE WORK WERE OBTAINED.

	State Universities		Agricultural and Technical Colleges		Other Universities		Colleges		Teachers Colleges		Total	
	I	S	I	S	I	S	I	S	I	S	I	S
California	1	1			1	3					2	4
Illinois	1	5			2	32	3	18			6	55
Iowa	1	704	1	251	1	70	10	157	1	180	14	1362
Kansas	1	1									1	1
Michigan	1	3									1	3
Minnesota	1	50									1	50
Missouri	1	6							1	16	2	22
Nebraska	1	25					1	6			2	31
South Dakota	1	3					1	1			2	4
Wisconsin	1	10									1	10
Totals	10	808	1	251	4	105	15	182	2	196	32	1542

I — Number of institutions
S — Number of students

information for the colleges that were not asked to send records. As indicated by the footnote on Table 20, only one of the colleges from which records were requested failed to respond.

The senior college records of 1,542 transfers were obtained. Of these, 1,362 or 88.3 per cent, were from fourteen Iowa colleges. Seven hundred four of the 1,542 or 45.7 per cent of the entire group were transfers to the State University of Iowa; 16.3 per cent to the Iowa State College of Agriculture and Mechanic Arts; 11.7 per cent to the Iowa State Teachers College. Only 11.7 per cent of the tran-

TABLE 20

Distribution of Junior College Graduate Transfers for Whom Records of Senior College Work Were Not Obtained

	State Universities		Agricultural and Technical Colleges		Other Universities		Colleges		Teachers Colleges		Junior Colleges		Business Schools		Nurses Training Schools		Other specialized Noncollegiate Institutions		Totals	
	I	S	I	S	I	S	I	S	I	S	I	S	I	S	I	S	I	S	I	S
Alabama	1	1																	1	1
Arizona	1	1																	1	1
Arkansas	1	1																	1	1
California	2	5			3	3	6	6											11	14
Colorado	1	3	1	1	1	2	2	2											5	8
Dist. of Columbia					2	5	1	1											3	6
Florida	1	4																	1	4
Georgia			1	1															1	1
Illinois					2	4	13	23	2	3									17	30
Indiana	1	1			2	2	1	2											4	5
Iowa			1	19	1	2	8	45*			2	2					2	4	14	72
Kansas			1	1			2	4	1	1									4	6
Kentucky							2	2	1	1									3	3
Louisiana	1	3			1	1													2	4
Maryland																	1	5	1	5
Massachusetts							1	2											1	2
Michigan			1	1	2	7	1	1	1	1									5	10
Minnesota	1	6					3	13									2	2	6	12
Missouri	1	4			1	3	4	7	1	2	2	4					1	1	10	21
Montana	1	1																	1	1
Nebraska							3	3	1	1									4	4
New Hampshire					1	1													1	1
New Mexico	1	1																	1	1

TABLE 20 — *Continued*

	State Universities		Agricultural and Technical Colleges		Other Universities		Colleges		Teachers Colleges		Junior Colleges		Business Schools		Nurses Training Schools		Other specialized Noncollegiate Institutions		Totals	
	I	S	I	S	I	S	I	S	I	S	I	S	I	S	I	S	I	S	I	S
New York					2	3	1	1	1	1							1	2	5	7
North Dakota									1	1									1	1
Ohio	1	1			1	1	3	3											5	5
Oregon	1	2					1	1											2	3
Pennsylvania	1	3	1	1	1	1													3	5
South Dakota							2	3											2	3
Tennessee							1	1											1	1
Texas	1	1			1	1	1	1											3	3
Virginia	1	1					2	2											3	3
Washington	1	1																	1	1
Wisconsin	1	1							1	1									2	2
Wyoming	1	1																	1	1
Miscellaneous													**	38	**	20	9	22	**	80
Totals	22	42	6	24	21	36	58	123	10	12	4	6		38		20	16	36		337

* Coe College, with 27 junior college graduate transfers, did not return records.
** Individual colleges not designated — total of other institutions is 128.

I — Number of institutions
S — Number of students

scripts were from senior colleges outside of Iowa. Of the 237 students who transferred to senior colleges but for whom records were not received, 171 went to 107 colleges outside of Iowa.

The following tabulation indicates the number of students in each of several classifications grouped according to the number of semes-

Hours of Work	Not in School	In School at Present
0	25	9
1-12	101	49
13-19	47	103
20-26	35	15
27-33	181	20
34-40	25	20
41-47	23	71
48-54	12	10
55-62	794	
Degree	692	

ter hours of work they have taken in senior college. The indicated number of semester hours includes hours of failing work as well as hours of credit earned. Each of these divisions, except the one for the four-year group, is divided into the group of students who were not in school at the time this study was made and the group who were in school at that time. The purpose of this division was to determine to what extent it might be said that the students have dropped from school because of low grades.

Included in this study are several colleges organized on the quarter system. This, together with the fact that a number of students carried less than the full schedule, that others took work in summer sessions, and still others accumulated credits by correspondence, made it necessary to divide the students studied into a larger number of groups than would have been required if all had completed regular semesters of college work. Where quarter hours were reported, as was the case with the Iowa State College of Agriculture and Mechanic Arts, the Iowa State Teachers College, the University of Minnesota, the University of Chicago, and others, these were translated into semester hours and interpreted accordingly.

Persistence in Senior College

Of the 1,542 Iowa public junior college graduates who transferred to senior colleges, and for whom records were received, 794 have remained in the full two years. An additional 297 junior college graduates are still enrolled in senior colleges. Thus, 1,091 of the

1,542 transfers or 71 per cent have either finished four years of work or are still in school. Of this number 692 or 55.5 per cent of 1,245 classified as not in school have received a degree. Twenty-five individuals withdrew from senior college before completing any work, while 31.2 per cent finished one year's work or less, and 4.8 per cent finished more than one year of senior college work, but less than two years.

In Table 21 the persistence of Iowa public junior college grad-

TABLE 21

PERSISTENCE IN THE SENIOR COLLEGE BY UNIVERSITY ENTRANTS AND JUNIOR COLLEGE TRANSFERS

Present Study*			From Gerberich and Kerr				
Iowa Public Junior College			University of Arkansas			Public Junior Colleges	
Semester Completed **	Number	Per Cent	Semester **	Number	Per Cent	Number	Per Cent
	1245	100.0	5	436	100.0	58	100.0
5	1117	89.6	6	421	96.6	54	93.1
6	1035	83.3	7	359	82.3	47	81.0
7	829	66.5	8	342	78.4	46	79.3
8	794	63.7					
Degree	692	55.5		282	64.7	31	53.1

* Transfers who were still in school at the time this study was made are omitted from this table.

** Of the 1245 Iowa public junior college graduates who transferred to senior colleges, 89.6 per cent completed the fifth semester, 83.3 per cent finished the sixth semester, etc. Iowa public junior college graduates completed the semesters in senior college as indicated, but the report from Arkansas does not make this point clear.

uates in senior colleges is presented. A comparison is made with a study from the University of Arkansas. The figures from the Arkansas study (16) do not indicate whether students were counted as they registered at the beginning of the semester or as they completed it. It is probable that the figures refer to the beginning of the semester since the 100 per cent group is the entering group at the University. In comparison with the Arkansas public junior college group the Iowa students withdraw in greater numbers during the two-year period, but a larger per cent graduate. The University group persists to a greater extent than do either of the junior college transfer groups.

Facts regarding the effect of ability, as measured by junior college grades, on survival in senior college are shown in Table 22. The group who continued in senior college for two years and re-

TABLE 22

RELATIONSHIP BETWEEN THE ABILITY OF PUBLIC JUNIOR COLLEGE GRADUATES AS MEASURED BY JUNIOR COLLEGE GRADE POINT AVERAGES AND THE LENGTH OF TIME THEY CONTINUE IN SENIOR COLLEGE

	Number of Hours of Senior College Work for Which Grades Were Recorded									
	0	1-12	13-19	20-26	27-33	34-40	41-47	48-54	55-62	Degree
Number of cases	25	101	47	35	181	25	23	12	794	692
A. M.	2.44	2.57	2.41	2.39	2.46	2.53	2.58	2.57	2.75	2.81
S. D.	.52	.66	.68	.66	.65	.72	.68	.43	.65	.63
P. E.	.07	.04	.07	.08	.03	.10	.10	.08	.02	.02
Percentiles										
High	3.89	4.00	3.71	3.83	4.00	3.98	4.00	3.22	4.00	4.00
75	2.71	3.03	3.06	2.82	3.00	3.27	3.23	2.73	3.27	3.32
50	2.42	2.55	2.30	2.23	2.37	2.35	2.69	2.59	2.70	2.78
25	2.06	2.12	1.92	1.94	1.93	2.00	2.02	2.04	2.26	2.34
Low	1.63	1.19	1.28	1.39	1.17	1.50	1.41	1.79	1.17	1.33

In reading this table the following explanation may be of help: twenty-five junior college graduates enrolled in senior college but failed to complete the first semester. This group, therefore, has zero hours of senior college work reported. The mean grade point average of these individuals in their junior college work was 2.44. Seventy-five per cent of this group received a grade point average below 2.71, 50 per cent below 2.42, and 25 per cent below 2.06.

ceived degrees had the highest average grade in junior college work. Those who withdrew after completing from twenty to twenty-six hours of work in senior college had the lowest grades on the average in junior college. The other groups varied between these two extremes. This table shows that the Iowa public junior college has not been the selective agency it was popularly supposed to be and that many students who had received low grades in the junior college have been able to persist in the senior college as long as have students who had received high marks in the junior college.

It must be remembered that the averages in this table are for work done in the junior colleges and that in most instances these institutions grade their students higher than do the senior colleges (Table 23). For a group of selected colleges, this difference in the junior college grading system and the senior college grading system is presented in Figure 14. The first three colleges on this graph actually grade lower than do the senior colleges. The other five have assigned grades to their students which are higher than the grades earned in the senior colleges. The last pair of bars show that for all the public junior colleges together the grades received by transfers are lower in their senior college work.

TABLE 23

Junior and Senior College Grade Point Average Measures for Individual Junior Colleges for Graduates Who Have Continued Two Years in a Senior College

	Grade Point Average Measures for Junior College					Grade Point Average Measures for Two Years in Senior College				
	High	75	50	25	Low	High	75	50	25	Low
Albia	4.00	3.63	3.13	2.56	1.52	3.58	2.98	2.40	2.07	1.94
Bloomfield	3.89	3.47	3.22	2.33	1.91	3.51	3.09	2.78	2.35	1.32
Boone	3.93	3.04	2.64	2.12	1.75	3.77	3.13	2.70	2.20	1.83
Britt	3.75	2.67	2.39	2.24	1.69	2.27	2.10	1.93	1.75	1.32
Burlington	3.94	3.21	2.58	2.10	1.41	3.83	3.08	2.48	2.13	1.02
Centerville	2.70	2.68	2.09	2.06	1.73	2.71	2.67	2.01	2.00	1.44
Chariton	4.00	3.83	2.82	2.65	1.44	3.02	2.90	2.56	2.13	1.85
Clarinda	3.88	3.20	2.69	2.34	1.29	3.45	2.83	2.58	2.18	1.70
Creston	3.94	3.27	2.80	2.27	1.40	3.75	2.91	2.50	2.19	1.49
Eagle Grove	2.56	2.53	2.10	1.66	1.50	2.56	2.10	1.77	1.68	1.66
Elkader	3.39	3.29	2.75	2.74	1.98	2.95	2.75	2.51	2.50	2.43
Ellsworth	4.00	3.27	2.78	2.46	1.63	3.50	2.88	2.40	2.14	1.54
Emmetsburg	3.48	3.32	2.58	1.88	1.61	3.57	2.91	2.52	2.32	2.17
Estherville	3.87	3.13	2.43	1.84	1.36	3.61	3.12	2.57	1.78	0.77
Fort Dodge	4.00	3.29	2.90	2.59	1.65	3.86	2.80	2.54	2.14	1.70
Independence	4.00	3.18	2.68	2.36	2.19	3.69	2.58	2.36	2.12	1.86
Maquoketa	3.90	3.33	2.62	2.23	1.95	3.74	2.54	2.18	1.90	1.80
Marshalltown	4.00	3.72	2.96	2.37	1.59	3.53	2.83	2.51	2.10	1.83
Mason City	4.00	3.31	2.78	2.32	1.57	3.93	2.93	2.44	2.13	1.18
Muscatine	3.84	3.14	2.67	2.26	1.72	3.51	2.68	2.51	2.25	1.84
Osceola	3.32	3.15	2.76	2.35	2.11	3.21	2.51	2.13	1.98	1.88
Red Oak	3.62	3.21	2.82	2.06	1.65	3.75	3.29	2.78	2.14	1.61
Sheldon	3.71	3.22	2.34	1.72	1.17	3.82	3.16	2.45	2.29	1.85
Tipton	4.00	3.33	2.74	2.47	1.89	3.37	2.92	2.44	1.74	1.27
Washington	3.71	2.93	2.57	2.25	1.46	3.48	2.88	2.38	1.98	1.62
Waukon	3.82	3.35	2.68	2.26	1.41	3.65	2.78	2.33	2.04	1.48
Webster City	3.84	3.46	2.67	2.22	1.71	3.85	3.21	2.63	2.33	1.61

This tendency for junior college teachers to assign relatively high grades to their students is probably, in part at least, the result of comparing the work done by these students with that done by the high school classes taught by the same teachers.

The grade point average measures of the 692 Iowa public junior college transfer graduates who have been graduated with the baccalaureate degree are shown in Table 24. In the study made by Jones of the success of junior college transfers, from which certain conclusions were quoted above, it was reported that the grade point average of public junior college transfers for the eighth semester was 2.54 and for the seventh semester 2.56. For the 692 transfers reported in this study who were graduated from senior colleges, the grade point average in their fourth year of work was 2.63. The fact that this average is slightly higher than that reported by Jones may

FIGURE 14

DIFFERENCES BETWEEN THE JUNIOR COLLEGE AND SENIOR COLLEGE GRADE POINT AVERAGE MEASURES OF GRADUATES FROM CERTAIN SELECTED PUBLIC JUNIOR COLLEGES WHO COMPLETED TWO YEARS IN A SENIOR COLLEGE.

(The wide portion of each bar represents the range of the middle half of each group. The lines at the ends extend down to the lowest and up to the highest score.)

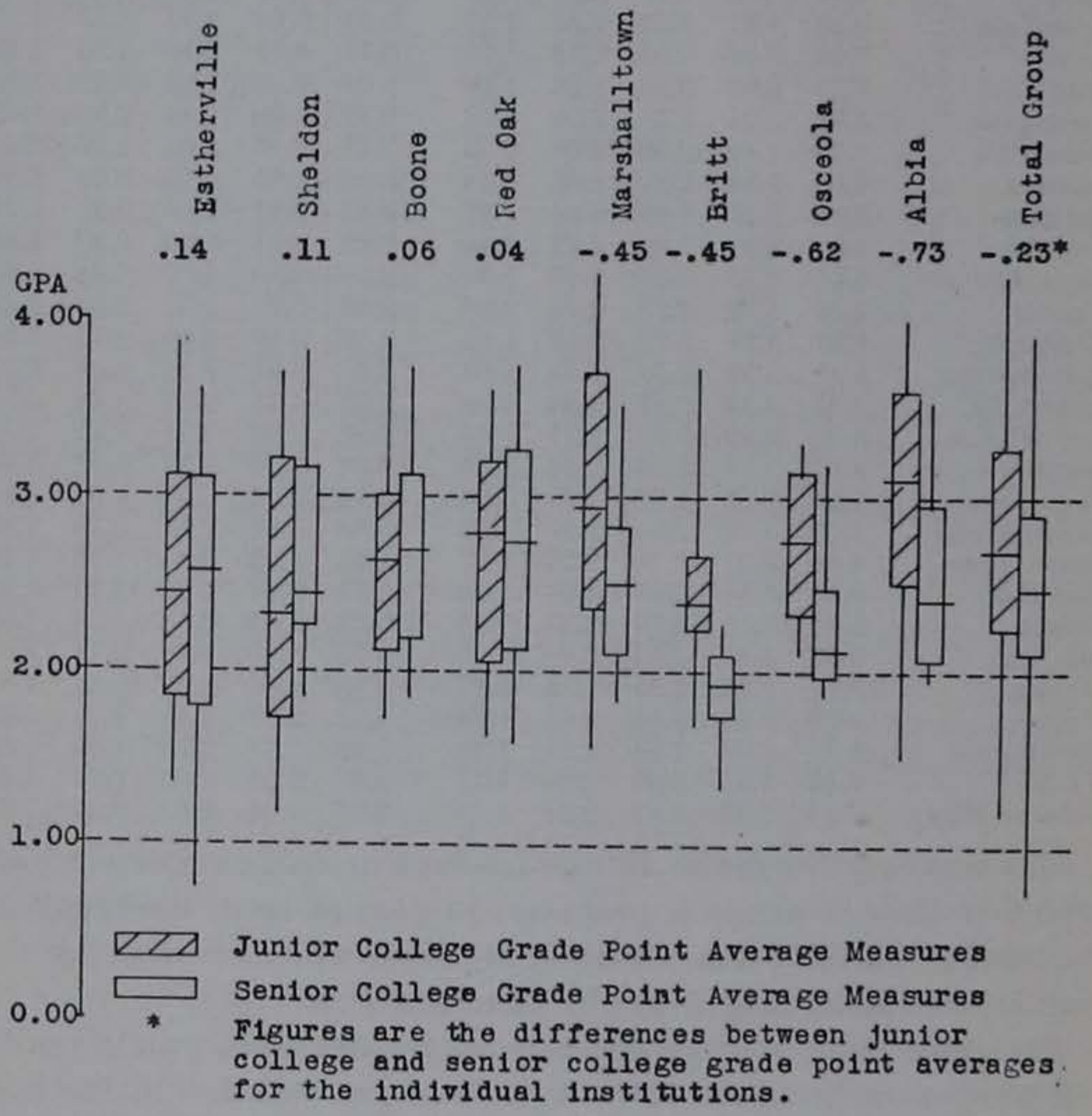


TABLE 24

GRADE POINT AVERAGE MEASURES FOR PUBLIC JUNIOR COLLEGE GRADUATES WHO HAVE CONTINUED IN A SENIOR COLLEGE AND HAVE BEEN GRADUATED WITH THE BACCALAUREATE DEGREE

	Two-year Average for Junior College Grades	First-year Grades in Senior College	Second-year Grades in Senior College	Two-year Average for Senior College Grades
No. of cases	692	692	692	692
A. M.	2.81	2.57	2.63	2.60
S. D.	.63	.57	.54	.51
P. E.	.02	.01	.01	.01
Percentiles				
High	4.00	4.00	4.00	3.93
75	3.32	2.97	3.00	2.94
50	2.78	2.53	2.57	2.53
25	2.34	2.17	2.25	2.20
Low	1.33	1.07	1.19	1.18

be the result of a number of factors, among them the wide range of this study in time and in types of institutions represented. For the fifth and sixth semesters respectively Jones reports averages of 2.50 and 2.51 as compared with the third year average grade in this study of 2.57.

In addition to the 692 transfers who were awarded a baccalaureate degree, 102 continued in senior college two years but failed to meet

TABLE 25

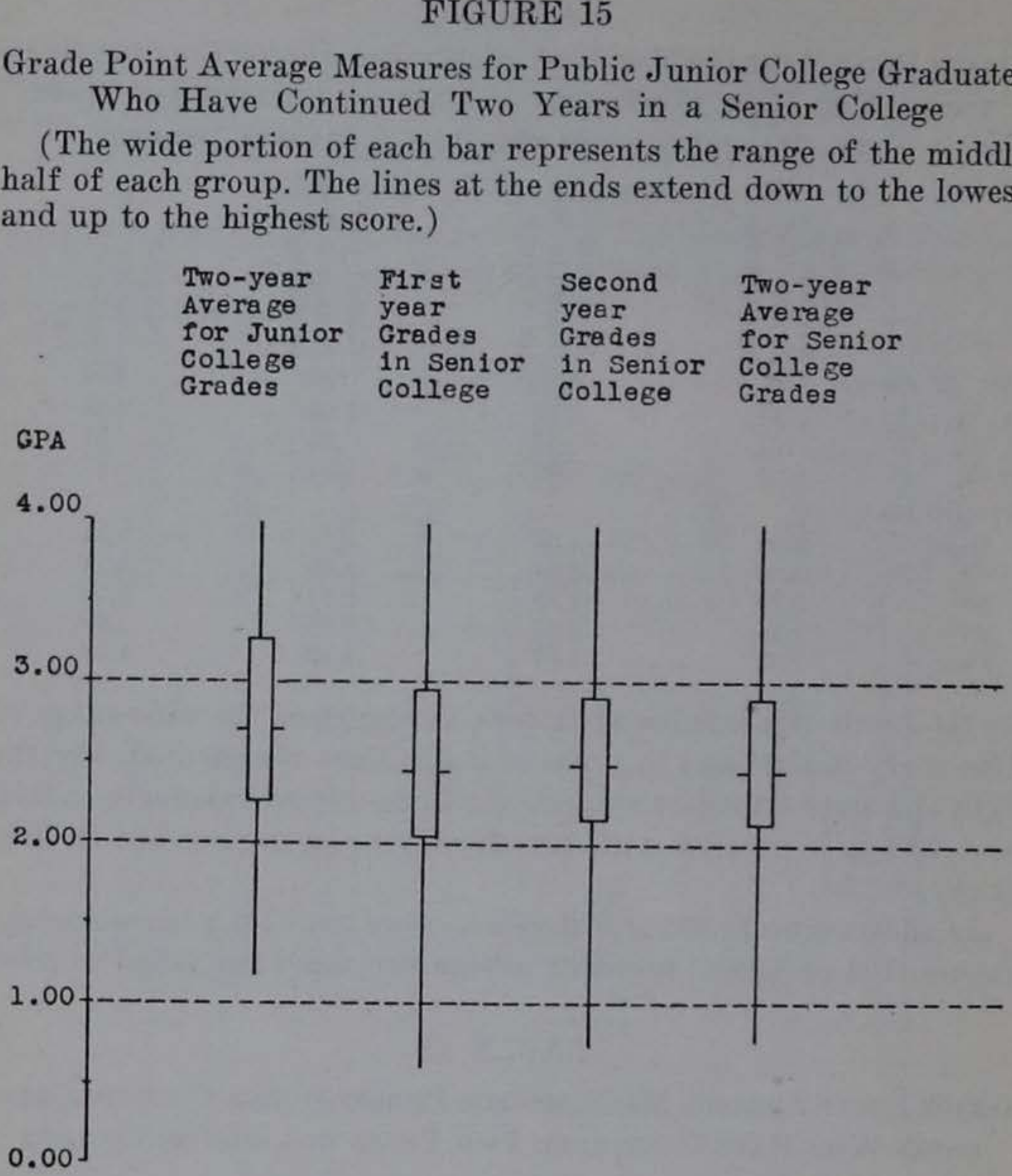
GRADE POINT AVERAGE MEASURES FOR PUBLIC JUNIOR COLLEGE GRADUATES WHO HAVE CONTINUED TWO YEARS IN A SENIOR COLLEGE

	Two-year Average for Junior College Grades	First-year Grades in Senior College	Second-year Grades in Senior College	Two-year Average for Senior College Grades
No. of cases	794	794	794	794
A. M.	2.75	2.50	2.55	2.52
S. D.	.65	.60	.57	.55
P. E.	.02	.01	.01	.01
Percentiles				
High	4.00	4.00	4.00	3.93
75	3.27	2.94	2.91	2.91
50	2.70	2.47	2.50	2.47
25	2.26	2.06	2.14	2.12
Low	1.17	0.57	0.73	0.77

FIGURE 15

Grade Point Average Measures for Public Junior College Graduates Who Have Continued Two Years in a Senior College

(The wide portion of each bar represents the range of the middle half of each group. The lines at the ends extend down to the lowest and up to the highest score.)



the requirements for the degree. The grade point average measures for the entire group of 794 transfers are shown in Table 25. A graph of these averages will be found in Figure 15. This table, and the others like it, does not indicate whether or not the students who received the high grades in the junior colleges were the ones who ranked high in senior college. For this reason, it seemed desirable to obtain a further measure.

For the 794 transfers who continued two years in senior college, Pearson product-moment correlation coefficients were computed between the two-year junior college grade point averages and the averages for the third and fourth years of work.

The following tabulation summarizes the results of this step. The correlation between the grade point average for the third year and those for the two years in junior college is .60. Between the fourth year averages and the junior college averages the correlation is .55.

Junior College Grade Point Averages	
A. M.	2.75
S. D.	.65
Third-year Grade Point Averages	
A. M.	2.50
S. D.	.60
r	.60
P. E. est	.33
Fourth-year Grade Point Averages	
A. M.	2.55
S. D.	.57
r	.55
P. E. est	.32

From the figures given above, and by the use of the regression equation, it is possible to predict the probable limits within which will fall the senior college grade point average of a student having a certain grade point average in junior college. For example, a student with a 3.00 average in junior college probably will have a grade point average close to 2.64 in his third year of work and the chances are 50 in 100 that this grade point average will not fall below 2.31 nor above 2.97.

In other words, a correlation coefficient of .60 would indicate that, while most of the individuals who were above average in the junior college would also be above average in senior college, there would be a large number of instances in which individuals above average in junior college would be below average in senior college. This variation would also be true of those who were below average in junior college. This is to be expected since we are dealing with a number of independent institutions each of which has its own grading system.

Junior College Grade Point Averages	
A. M.	2.54
S. D.	.66
Third-year Grade Point Averages	
A. M.	2.22
S. D.	.62
r	.60
S. E. est	.33

A correlation coefficient was also computed for all transfers who completed three or more years of work but less than four. The detailed measures for this group are found below. This was a correlation between the two-years' average for junior college grades and the average for the third year of work. Three hundred sixty-two transfers were included in obtaining the measures in this table, and the correlation was the same (.60) as for those who completed the four years.

Table 25 presents a comparison of the senior college grade point

TABLE 25

COMPARISON OF THE SENIOR COLLEGE GRADE POINT AVERAGE MEASURES FOR THE THIRD YEAR OF COLLEGE WORK OF ALL TRANSFERS WHO CONTINUED IN COLLEGE THREE OR MORE YEARS (NOT INCLUDING THOSE WHO WERE IN SCHOOL AT THE TIME OF THIS STUDY).

	Number of Hours' Work Taken in Senior College					
	27-33	34-40	41-47	48-54	55-62	Degree
Number of cases	181	25	23	12	794	692
A. M.	2.11	2.23	2.30	2.17	2.50	2.57
S. D.	.63	.71	.49	.59	.60	.57
P. E.	.03	.10	.07	.12	.01	.01
Percentiles						
High	4.00	3.56	3.21	3.16	4.00	4.00
75	2.47	2.74	2.74	2.56	2.94	2.97
50	2.10	2.07	2.31	2.26	2.47	2.53
25	1.73	1.70	1.91	1.83	2.06	2.17
Low	0.62	0.75	1.37	1.00	0.57	1.07
Difference* in Means		.12	.07	–.13	.33	.07
Difference** in Junior College Means for Same groups		.17	.05	–.01	.18	.06

* The difference between the mean grade point average in column one, students completing from 27 to 33 hours of work in senior college, and that in column two, students completing 34 to 40 hours of work in senior college is .12. The other differences are found by the same method.

** The means from which these differences were obtained are found in Table 22.

average measures for the third year of college work of all transfers who continued in college for three or more years. This is the first year of senior college work for these transfers and shows, although the difference is slight, that on the average the longer the student remains in school the higher his grade point average in the third year will be. The only exception is for the 12 students who have taken 48 to 54 semester hours of senior college work. The difference between the mean grade point average of the group in column one

and column two is .12 grade points; from those in column two to column three is an increase of .07; from column three to column four is a decrease of .13; from column four to column five is an increase of .33; and the degree people in column six have a higher grade point average than the total group of four-year people in column five of .07. The total difference in the grade point average of the degree group and that of the group who withdraw at the end of three years (column one) is .46, or nearly half of one grade point. The difference in the junior college grades of these two groups (see Table 22) was .45 or practically the same difference as in the first year in senior college.

The differences between the means on the two-year junior college average for the same groups bear a rather striking similarity to the differences cited above.

The study made by Jones was concerned with only those transfers who were graduated from the State University of Iowa. He found that they succeeded as well as did graduates who had had the first two years' work at the University. His study did not show what success transfers had who did not graduate. Results presented in this chapter show that the grade point averages of those who drop out at each of the several levels of senior college work are only slightly less than those of the groups dropping out later, but the grade point average of those who are graduated is from one quarter to one half of one grade point above those who drop out earlier. Of the 553 junior college transfers who withdrew before graduation from senior college, approximately 35 per cent had grade point averages below 2.00. Since 2.00 is the average usually required for graduation, it can be said that nearly 65 per cent of those who withdrew had a satisfactory degree of scholastic success in senior college but withdrew for other reasons. Only 15 per cent of those who withdrew had a grade point average of 3.00 or above.

CHAPTER IX

THE NONTRANSFER GRADUATE

In Chapter VI it was pointed out that 46.3 per cent of the students who are graduated from the Iowa public junior college do not continue their formal education. Three per cent continue their education in types of institutions which do not require junior college training for entrance. Considering that a possible 10 per cent of the students for whom senior college records were not received may not have transferred, in addition to these mentioned above, the probable maximum number of Iowa public junior college graduates who transfer to senior colleges is very close to 50 per cent.

The questionnaire used in this study was filled out by those students who did not transfer to a senior college. This group totalled 1,607. Through the aid of the junior college administrators and the student helpers, an attempt was made to contact personally as many of these people as possible. It is believed that those who took the time to fill out the questionnaires did so with a great deal of care. There are a number of items by which cross checks can be made and in each of these the indications are that the answers have high validity. The close correspondence between the number who indicate on the questionnaire that their father's occupation is farming and the number who say they were reared on the farm is one example of the consistency with which these questionnaires were answered.

The following analysis of the group returning these questionnaires indicates that the sample received was quite representative. Table 26 is a distribution by colleges and years of the questionnaires filled out and returned. The table shows that questionnaires were returned by graduates from all except two colleges and for all but two years. The total number of questionnaires returned was 746, or 46.5 per cent.

The following tabulation presents the information relative to the grade point average in junior college for the total group of nontransfers and for the sample of 746 who filled out and returned questionnaires. The difference between the grade point averages is negligible. The two groups correspond almost perfectly from this

TABLE 26

Distribution and Percentages of Questionnaires Returned, by Colleges and by Years

College	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	Total	Per Cent*
Albia										3	4	4	2	3	5	7	9	37	70
Bloomfield											6	1	5	5	4	7	0	28	78
Boone										2	1	1	1	3	0	2	3	13	21
Britt											2	4	4	4	9	7	4	34	62
Burlington				6	4	3	1	0	7	6	15	3	12	13	15	13	19	117	75
Centerville													3	3	3	7	9	25	64
Chariton										1	3	4	4	4	1	6	11	34	89
Clarinda						3	2	3	2	2	4	4	3	3	2	5	0	33	49
Creston								2	3	3	3	6	4	5	4	6	7	43	26
Eagle Grove											3	0	1	0	3	1	1	9	21
Elkader											3	1	1	0	2	4	3	14	33
Ellsworth																		0	
Emmetsburg													3	6	2	5	3	19	100
Estherville									2	2	2	5	2	1	3	2	6	25	38
Fort Dodge												1	1	2	1	1	6	12	17
Independence											2	0	3	2	1	2	3	13	54
Maquoketa																		0	
Marshalltown										3	1	1	1	4	2	1	4	17	43
Mason City						1	0	0	1	0	1	4	3	4	5	2	5	25	25
Muscatine												7	1	5	6	5	10	34	68
Osceola										1	2	3	3	3	4	8	15	39	68
Red Oak													2	10	6	10	10	38	61
Sheldon									1	2	1	2	1	2	1	3	10	23	56
Tipton										2	1	1	3	4	5	1	4	21	84
Washington											1	3	4	3	4	4	9	28	62
Waukon						1	2	1	2	1	2	1	8	7	6	6	6	43	70
Webster City									3	4	3	3	1	0	1	2	4	21	50
Total	6	4	8	5	6	21	32	60	59	76	96	95	117	161	746				
Per cent*	100	67	53	22	30	30	30	44	36	40	43	54	50	65					

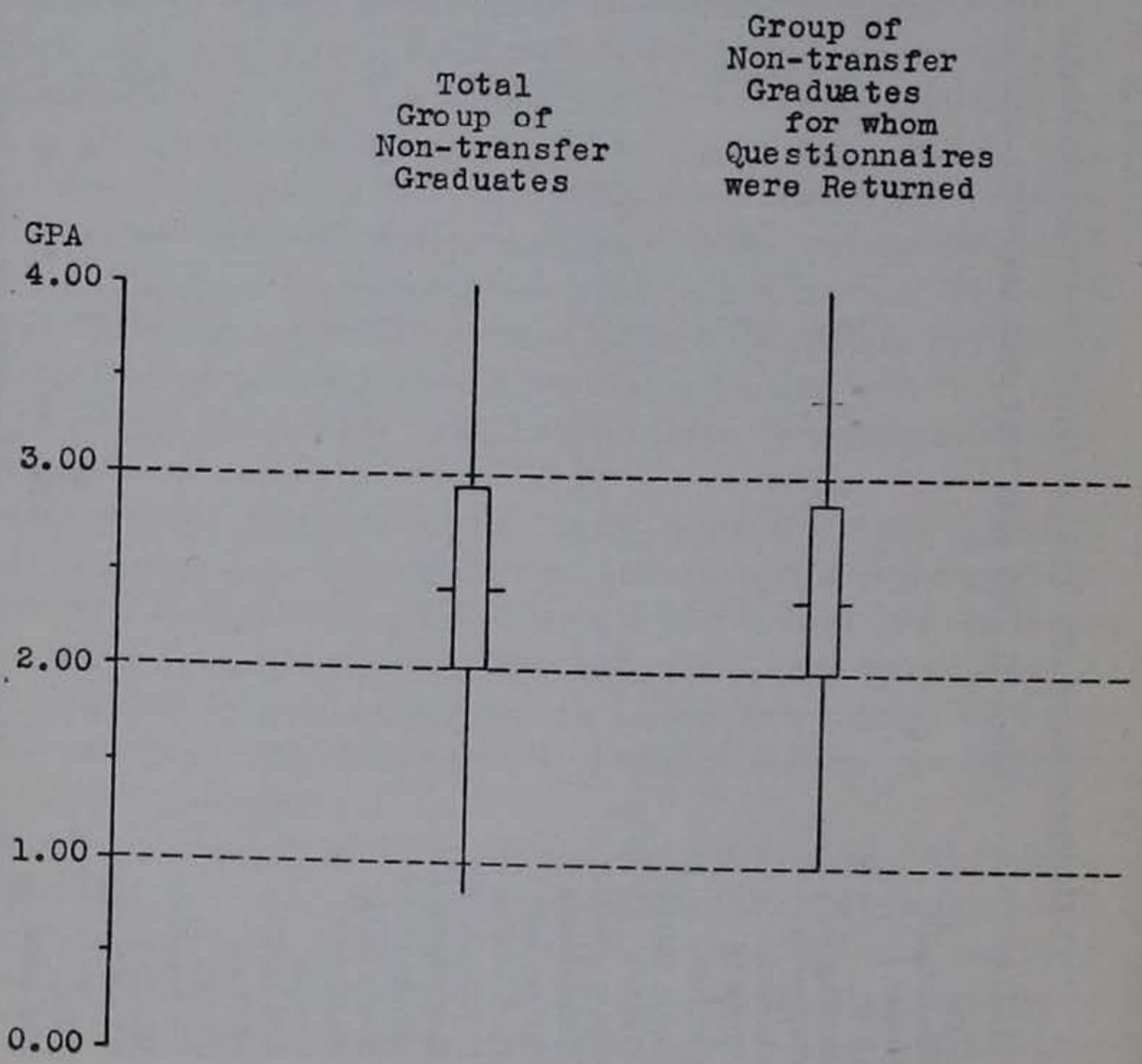
* Fractions of the total number of nontransfers returning questionnaires

	Nontransfer Graduates	Nontransfer Graduates Returning Questionnaires
Number of cases	1607	746
A. M.	2.48	2.46
S. D.	.64	.63
P. E.	.01	.02
Percentiles		
High	4.00	4.00
75	2.94	2.89
50	2.40	2.37
25	2.00	2.00
Low	0.87	1.00
	Sex of Two Groups	
Boys	39.7	35.7
Girls	60.3	64.3

FIGURE 24

Comparison of the Grade Point Average Measures for the Total Group of Non-transfer Graduates with those for the Group by whom Questionnaires were Returned.

(The wide portion of each bar represents the range of the middle half of each group. The lines at the ends extend down to the lowest and up to the highest score.)



standpoint. The percentage of boys and girls in the two groups corresponds as closely as could reasonably be expected. In the total group, 60.3 per cent are girls and 39.7 per cent boys. For those returning the questionnaires, 64.3 per cent of the group were girls and 35.7 per cent boys.

It has been indicated earlier that ability has not been the chief factor in determining whether or not graduates of the Iowa public junior colleges will continue their formal education. The poorer students are as likely to continue as are the better. It has been pointed out that 72 per cent of those who did not continue would have done so if they had been financially able. Fourteen per cent stated that the reason they did not continue was because they wanted to work. Only 2.8 per cent did not care to continue or felt that college work had become too difficult.

In most cases the objective of the junior college has been to prepare its students for further college work. The curriculum has been almost entirely preparatory in content and organization. The junior college catalogues all emphasize the fact that the courses offered are acceptable to other colleges and list the various courses which should be taken if the student desires to go into medicine, law, engineering, etc. Very little is said about the desirability of having two years of higher education for the sake of enriching the life of the individual or to prepare him to enter upon a vocation following junior college graduation.

Nearly all of the nontransfer graduates who answered the questionnaires indicated that it had been their intention to continue their formal education after graduation. Less than one-fourth said they would not have gone to college at all had there been no junior college. For three-fourths of the nontransfers the junior college was accepted as a choice made on the basis of economy.

It is possible that if the junior colleges were to make an effort on behalf of the individuals who desire only a two-year course and not preparation for further advanced work the character of the entire program might be changed. Financially, however, the support of the college preparatory group could not be sacrificed and it is doubtful whether the Iowa junior colleges can attempt to serve this function of education for life until financial aid is secured.

The "terminal" graduate from the Iowa public junior college is, then, not terminal at all but a "preparatory" graduate who happened to be unfortunate in not being able to support himself in

further school work. The distinction between the two groups is certainly not one of ability, as was brought out in Chapter VII.

For the 746 nontransfer graduates who answered the questionnaire, the following tabulation sets out the type of environment in

Early Environment	Number of Individuals	Per cent of the 746 Answers
Farm	281	37.7
City	463	62.0
(Under 2,000)	106	14.2
(2,000-15,000)	215	28.8
(Over 15,000)	142	19.0
Unanswered	2	.3
Total	746	100.0

which they spent the early part of their lives. Men and women who were reared on the farm compose 37.7 per cent of this group; 14.2 per cent came from towns under 2,000; 28.8 per cent from towns of 2,000 to 15,000; and 19.0 per cent came from cities over 15,000. The tabulation below gives an analysis of the occupations of the fathers of these graduates.

Occupation	Number	Per cent
Farmer, agriculturist	296	39.7
Agent, office worker, salesman	75	10.1
Banker, financial agent	14	1.9
Contractor, building trades (carpenter, bricklayer, plumber)	52	7.0
Government, public service	29	3.9
Merchant, dealer, proprietor	83	11.1
Doctor, lawyer, teacher, preacher, or other professions	41	5.5
Trades other than building (skilled mechanic, painter, etc.)	43	5.8
Manufacturer, public utilities	6	.8
Railroad employee	52	7.0
Mining laborer	12	1.5
Unskilled laborer	31	4.2
Unanswered	12	1.5
Totals	746	100.0

Next in frequency to the farming group are the merchants. These are followed closely by the group of workers which includes agents, office workers and salesmen. These three classifications include more than 60 per cent of the fathers of graduates who did not continue their formal education.

Only 36 nontransfer graduates indicated that their mothers worked to support the family. Of these, 16 taught school, 7 were in the agent-office work-salesman classification, and 7 in the merchant group.

Of 702 answers to the question, "Did the junior college give you any specific guidance helpful in choosing a vocation?" 351 said

yes, and exactly the same number said no. The question, "Did the junior college give you any specific training for the work you are now doing?" was answered in the negative by 369, or 49.5 per cent of the total group, with 2 per cent not answering. Four hundred seventy-two, or slightly over 63 per cent, said they were not in the type of position they had had in mind when studying in the junior college. Of the remaining 37 per cent, more than two-thirds had prepared for and had become teachers, as is shown in Table 27.

TABLE 27

FIRST OCCUPATIONS OBTAINED BY NONTRANSFER GRADUATES FROM IOWA PUBLIC JUNIOR COLLEGES

	Men	Per Cent	Women	Per Cent	Total	Per Cent
Farmer, agriculturist	53	19.9	3	.6	58	7.8
Agent, office worker, salesman	73	27.5	118	24.6	191	25.4
Banker, financial agent	1	.4	2	.4	3	.4
Contractor, building trades (carpenter bricklayer, plumber, etc.)	5	1.9	0		5	.7
Government, public service	11	4.1	4	.8	15	2.0
Merchant, dealer, proprietor	18	6.8	10	2.1	28	3.7
Teacher, minister	20	7.5	176	36.7	196	26.2
Trades other than building (skilled mechanics, etc.)	11	4.1	0		11	1.5
Manufacturer, public utilities	3	1.1	2	.4	5	.7
Unskilled laborer	33	12.5	18	3.8	51	6.8
Government relief projects	3	1.1	2	.4	5	.7
Unemployed	8	3.0	58	12.1	66	8.8
Unanswered	27	10.1	87	18.1	114	15.3
Totals	266	100.0	480	100.0	746	100.0

For the majority of these individuals it was necessary to continue their formal education beyond the junior college in order to enter upon the occupation of their choice. Table 28 gives the list of their first and second choices. It will be seen from this table that 67.5 per cent of these people had a profession as their first goal, and 60 per cent selected a profession as their second choice. Their goals were lost to them, therefore, when they were not able to continue their formal education after junior college graduation.

TABLE 28

First and Second Occupational Choices of 472 Iowa Public Junior College Graduates Who Indicated That They Had Not Achieved Their Preferred Life Work

	First Choice	Per Cent	Second Choice	Per Cent
Farmer, agriculturist	11	2.3	21	4.5
Agent, office worker, salesman	53	11.2	99	21.0
Banker, financial agent	4	.8	6	1.3
Contractor, building trades (carpenter, bricklayer, plumber)	2	.4	3	.6
Government, public service	32	6.8	20	4.2
Merchant, dealer, proprietor	9	1.9	25	5.3
Doctor, lawyer, teacher, minister, or other profession	318	67.5	282	59.7
Trades other than building (skilled mechanic, painter, etc.)	13	2.8	7	1.5
Manufacturer, public utilities				
Railroad employee	2	.4	2	.4
Mining laborer			7	1.5
Unanswered	28	5.9		
Totals	472	100.0	472	100.0

Factors which determine the employment obtained by these graduates are listed below:

Reason	Number	Per Cent
Because it was the only available job	202	27.2
Because my father (or relative) was in this occupation	68	9.1
Because someone I admired was in this occupation	10	1.3
Because it was the type of work I really wanted to do	213	28.5
Because of interest aroused in junior college	12	1.6
Other reasons	93	12.5
Unanswered	148	19.8
Total	746	100.0

The per cent who state that they are in the type of position desired is only slightly greater than that given in Table 27 for the number who enter teaching. An examination of the questionnaires indicates that it was largely the teachers who stated that they are in the type of work they really wanted to do. The only others who checked this answer were in office work. Nearly the same per cent have accepted whatever job was available. Less than 2 per cent acquired an interest in junior college which led them to the occupation entered.

The evidence from these answers would indicate that the junior college is chiefly interested in those students who desire to continue their formal education and enter upon one of the professions. Students are largely interested in the professions and are not en-

tirely satisfied when it is necessary for them to drop out of school because of economic considerations.

The fact that ability to continue has little relationship to these desires is the most disappointing feature of the situation. The junior college has not been able to convince its students that it may not be necessary to enter one of the professions in order to live a happy and useful life as a citizen of the community.

Eells (14, p. 331) reports that in a study of the lower 5 per cent of ten thousand students in California junior colleges, 70 per cent of the men were planning to continue their education beyond the junior college, and only 7 per cent were definitely sure they would not do so. Over half planned to pursue professional work. The need is for guidance which will take into account the ability of the individual student.

CHAPTER X

SUMMARY AND CONCLUSIONS

In order to study the problem of the Iowa public junior college it was necessary to gather many objective facts and to present them in such form that their relationship to the broader problem could be adequately considered. Annual reports of the public junior colleges, since the origin of each, were analyzed; academic records of their graduates were secured; a series of tests were administered to the present sophomore classes; and answers to a questionnaire were obtained from graduates who did not continue their formal education beyond the junior college. Each of the junior colleges was visited and where it seemed advisable a second visit was made.

The following summary of facts is a result of the analysis and consideration of the data thus obtained:

1. Thirty-one public junior colleges have been organized in Iowa since 1918. Twenty-one of these came into existence in the four-year period preceding 1932, four of which were discontinued.

2. The average enrollment for 1936-1937 in the Iowa public junior college is 72.5. Nine have fewer than fifty, the minimum recommended in the standards; four have over one hundred. The median size of the cities having public junior colleges is five thousand.

3. On the average only 28.6 per cent of the students graduating from the local high school enter the local junior college; 10.79 per cent go to other colleges. On the average the enrollment in the two years of the junior college coming from the local high school is only 18.7 per cent of the enrollment in the upper two years of the high school. From 1928 to 1936 the total average enrollment has increased 133 per cent, but there was a slight drop in enrollment in 1936-1937. Over a period of years the proportion of students who came from outside districts has varied from 28 per cent to 32 per cent.

4. Over a period of years the median percentage of freshmen who return for the second year's work is 54. Of this sophomore group only about 70 per cent are graduated. Of the 46 per cent of freshmen who drop out of junior college at the end of one year, 12 to 15 per cent transfer to other colleges at that time.

5. With few exceptions, the Iowa public junior colleges are housed in high school buildings. The facilities are generally those of the high school with some additions to the libraries and laboratories because of the junior

college needs. Only a few libraries have been organized separately for the junior colleges. Chemistry laboratory facilities of only seven institutions would meet a standard of half that set up by Eells for junior college needs. The variation in the value of these laboratories in the Iowa public junior colleges is from $650 to $5,200.

6. Of the 191 academic instructors in the Iowa public junior colleges, 81.5 per cent teach in the respective high schools; the amount of time devoted by these teachers to the high school varies from 23.8 per cent to 90 per cent with a median of 53.5 per cent. By having the junior college instructors teach in the high school, the number of subjects the college can offer is increased. The average school has seven instructors but the average number of instructors based on a fifteen-hour per week schedule would be slightly less than four.

7. The average student-teacher ratio, using the equivalent number of full-time teachers of academic subjects as a base, is 18.4 with a range of 8.3 to 31.5.

8. Of the junior college teachers of academic subjects, 64.2 per cent have their baccalaureate degree from Iowa colleges. Sixty-three per cent have their master's degree from Iowa graduate colleges. Since 1930 the number of teachers with master's degrees has increased by two per college.

9. In all, there are 228 teachers in the Iowa public junior colleges. One hundred eighty-eight of these have master's degrees and two have the degree of Doctor of Philosophy. Four have master's degrees from graduate colleges not considered as "recognized graduate colleges."

10. Information concerning undergraduate work was obtained for 181 instructors. Of these one hundred have the same major in both graduate and undergraduate work, and twenty-four more had both majors in the same field.

11. Although junior college instructors have, on the average, been in the respective school systems longer, their median experience in their present junior college positions has been 5.19 years. The previous experience of these teachers includes rural, grade, high school, college, and high school combined with junior college teaching. The median total experience for the 183 teachers reported is 10.47 years.

12. Of the 191 academic teachers in the Iowa public junior colleges, only 146 teach the subject of their graduate major; twelve others teach in the field of that major.

13. Fourteen junior college instructors teach three different subjects in junior colleges, sixty-seven teach two subjects, and 110 teach one subject only. Four of these teach three subjects in high school, 23 teach two subjects, and 123 teach one subject in high school. English and mathematics are the subjects most commonly taught in the high schools by junior college teachers.

14. The classroom teaching load for Iowa public junior college academic instructors varies considerably. A load from two to twelve hours per week

may be considered as indicating that the instructor concerned is carrying an additional load of administrative work or of types of activity other than classroom teaching. The median teaching load for all teachers is 15.7 hours per week, when an hour of high school teaching is figured at four-fifths of an hour of college teaching. A number of teachers have teaching schedules which exceed the maximum load as set up by the standards.

15. Teachers in public junior colleges receive salaries only slightly above those of the high school teachers in towns of the size of the median junior college city. The median salaries for men instructors in the year 1936-1937 was $1,600; for women, $1,392. The median salary of junior college deans was $1,900.

16. All of the colleges offer subjects in each of the five fields required by the standards. In all, fifty different subjects, including first and second years of the same subjects, are offered in the twenty-seven colleges. Composition and rhetoric, English literature, principles of speech, and first year mathematics, are the only subjects offered by all of the colleges. Thirteen subjects are offered by three-fourths of the colleges, twenty-six subjects are offered by less than one-fifth of the colleges, thirty-six subjects are offered by fewer than half of the colleges.

Two of the Iowa public junior colleges offer teacher training courses which prepare for the Iowa standard elementary certificate, while fourteen additional colleges offer ten semester hours of education and psychology which lead to the first grade county certificate.

17. Centerville and Ellsworth have adopted the two-year course of English as organized at the State University of Iowa. Centerville also offers a course in exploratory or combined science. Sheldon permits students to obtain credit toward graduation by means of correspondence courses with the State University of Iowa.

18. Graduates from the junior colleges since 1931 have taken courses similar to the present list of offerings. Nine subjects appear on the records of more than 50 per cent of these graduates. Twenty subjects appear on the records of 10 per cent or more.

19. From the results of the tests that were administered to all public junior college sophomores it is apparent that this group as a whole is equal in mental ability, as measured by the psychological examination, to the group of juniors in education at the State University of Iowa. The special character of this University group, used for comparison, is such that it is probably of higher average ability than the entire sophomore class at the University. If this is accepted, it may be said that the junior college students are somewhat superior in mental ability to the sophomores at the University.

20. Iowa public junior college sophomores made scores in English which were distinctly superior to those of sophomores in the sixty colleges taking the same test in 1935. They were slightly below the University juniors in this test.

21. Iowa public junior college sophomores did not do so well in the test in the social studies as the students in the sixty colleges and are considerably below the State University juniors who were largely majors in this field.

22. The colleges do not all measure up in each of these tests, and when mental ability is used as a base of comparison it is evident that certain colleges do not measure up to the work that might be expected of them. Others are doing work which is highly commendable from this standpoint. The variability between colleges is not nearly so great as the variability between students within a single college.

23. It is believed that the junior college should be a selective institution as far as transfers to senior colleges are concerned. There has also been a popular assumption that this institution was serving this function. The evidence presented in this study on the basis of junior college grades earned by those who transfer and those who do not, does not support this assumption. About 50 per cent of the graduates of the Iowa public junior colleges have continued their formal education in senior colleges, but this 50 per cent does not come from those earning higher grades in junior college. The mean grade point average of transfer graduates is .17 grade points higher than the grade point average of the nontransfer graduates. Twenty-five per cent of the nontransfers were below a junior college grade point average of 2.00 while 22 per cent of the transfers were below this point. Twenty-nine per cent of the transfers have junior college grade point averages above 3.00, while 24 per cent of the nontransfers are above this point. The quality of work done in the junior college has little relationship to the probability that an individual will or will not attend a senior college. On the other hand, the correlation between grades received in junior college and those earned in senior college is only .60, so that junior college grades are only a fair means of predicting senior college grades.

24. Junior college transfers have been successful in senior college work, as has been shown by a number of studies. The present study shows that there is only a slight relationship between the grades earned in senior college and the length of time the transfers continue in the senior college. The grade point average of those who are graduated from senior college is .45 grade points higher than that of those who drop out before completing the first semester. Those who drop out at each successive level in senior college, with exception of one group, have slightly higher grades than the group dropping out before.

25. Graduates of the Iowa public junior colleges who do not continue their formal education have had relatively little training for their occupation. Those who teach have had this special preparation, and with a few who indicate that they had prepared for office work, these are the only groups who indicate that they had planned for the occupation in which they now find themselves. The majority of the others intended to continue their formal education but were financially unable to do so.

The Iowa public junior college has made it possible for young men and women who, in many cases, would not otherwise have been

able to go to college, to receive the benefits of two years' additional education. The establishment of junior colleges in the several communities has served to bring the college to the student. Several Iowa communities having junior colleges are not far distant from senior colleges and for this reason students in such communities might have been served by those senior colleges. The community itself has benefited culturally and socially from having the college influence within its area, both from the standpoint of the direct influence of the junior college, which could be extended by giving more attention to adult education, and from the standpoint of retaining the young men and women of this age group in the local community. It is not likely that the public junior college in Iowa will decrease in importance. More than ten thousand individuals have been served by this institution during its history; about two-thirds of this number in the past six years. The future of the public junior college in this state depends upon certain decisions which cannot be made by the individual junior colleges. They must be made by educational leadership in the state and should be preceded by the development of close co-operation on the part of all educational institutions above the high school. These groups must determine the need for such educational institutions, the function of each type of institution, and the number and type of students who should be served by each.

If the junior college is to remain purely a preparatory school, its future will be little different from its past. If it is asked to adopt the function of general education for all high school graduates, it will certainly expand. If tuition charges are continued, the institution will not serve as many as it would if no charges were made. However, junior college education in Iowa cannot be supported from taxation until the financial problems facing the present system of public education have been solved. With approximately 98 per cent of school revenue coming from property taxes, the schools of Iowa are under a terrific handicap. No system of free public education at the junior college level can be contemplated until satisfactory adjustments are made at this point.

Expansion of the area of the districts supporting junior colleges is essential to future development. This would involve the creation of junior college districts, which would probably be entirely separated from local school districts. A certain amount of state control and state co-ordination would be essential.

The junior college teachers, while fairly well trained in the subjects taught, have not had the advantage of specialized training for teaching in this field. In the future there is likely to develop, to a larger extent than at present, a type of university training which will prepare teachers for the junior college level in all types of higher educational institutions. Advances in reorganization in curriculum must follow, rather than precede, the specialized training of instructors.

If it could be shown that success in senior college does not depend greatly on work done in junior college, the function of the junior college as a preparatory agency would then be to make a distinct contribution to the education of the student, a contribution which the senior college will not be expected to duplicate. A better measure of the effectiveness of the junior college is the extent of this special contribution rather than the ability of the students to carry the work of the senior college successfully.

The junior college needs to do more for the individual student, for his personal and social attitudes, for his knowledge and understanding of society, for his knowledge and understanding of his physical environment. Beyond certain courses which are prerequisite for courses to be taken in senior college, his senior college work does not depend upon the number of facts collected in the junior college. It depends more upon the mental maturity of the student, his judgment, his ability to study independently and effectively. These are accomplishments needed alike by those who continue their formal education and those who pass from junior college into other avenues of life.

The objective of the Iowa public junior colleges has been to see their graduates succeed in senior college. This is the result of the constant measuring of the success of these institutions by this measuring stick. The primary objective placed before their students has been to prepare for senior college work.

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APPENDIX

STANDARDS APPROVED BY THE INTERCOLLEGIATE STANDING COMMITTEE FOR JUNIOR COLLEGES

In 1918 the Iowa State Board of Education approved the formation of an Intercollegiate Standing Committee from the three state institutions of higher learning to make recommendations to the faculties from time to time with reference to the acceptance of credits at these institutions from colleges and junior colleges.

In order that institutions of higher learning may have information regarding the standards used by the committee as a basis for its recommendation that credits be accepted, the committee has published these standards from time to time. These are minimum standards. Junior colleges should strive to maintain higher standards than those herein indicated.

I. INTRODUCTION

An institution offering only two years of college work should be designated as a junior college.

The location of a junior college should be such as to warrant expectation of an adequate enrollment and a proper development of the institution.

II. ADMISSION REQUIREMENTS

Not less than fifteen units of standard secondary credit shall be required for unconditional admission to a junior college. The minimum number of units for conditional admission shall be fourteen. Entrance conditions should be removed during the first year and an entering student should be required to register at once for work necessary to meet entrance requirements. The student's registration, including work necessary to meet entrance requirements, shall not be in excess of what is permitted by the regulations pertaining to the student load.

III. WORK OFFERED

A junior college should provide college courses in at least the following fields: English, foreign languages, mathematics, physical or natural science, and social science. The number and character of these courses should be such as to provide proper preparation for subsequent college work.

IV. FACULTY

1. Administrative Heads

The superintendent of a public school system which maintains a junior college and the administrative head of any junior college must have a master's degree from a recognized graduate school.

2. Instructors

Unless otherwise specified in these standards an instructor must have a mas-

ter's degree from a recognized graduate school and may give instruction only in the field of his graduate major or in the field of his graduate minor, consisting of at least ten semester hours of graduate work. When possible the teaching should be confined to the field of the graduate major.

3. An Instructor in Music

If the work in music is given for credit, the instructor in it must have a bachelor's degree with a major in music and must have completed the equivalent of one year of specialized work in music beyond that required for the degree.

4. Instructors in Art and Mechanical Drawing

If the work in art is given for credit, the instructor in art must have a bachelor's degree with a major in art and must have completed the equivalent of one year of specialized work in art beyond that required for the degree.

An instructor in mechanical drawing must have a bachelor's degree and must have as much credit in mechanical drawing as is required on a standard curriculum in mechanical engineering (eight semester hours).

5. An Instructor in Physical Education

If the work in physical education includes only the physical training ordinarily required of freshmen and sophomores, the instructor must have a bachelor's degree with a major in physical education.

6. The load of an Instructor

The maximum load of an instructor shall be fifteen to eighteen periods of junior college teaching a week, or twenty periods of junior college and high school teaching, or an equivalent amount of work in classroom instruction, administrative duties, and extra-curricular supervision combined. One and one-half clock hours of laboratory work are to be counted as one period of teaching. Advisory duties and extra-curricular supervision are to be counted as laboratory work.

V. ENROLLMENT

A junior college in its earlier years should have a minimum of 25 students in the first year and 50 students in the two years, the ideal minimum of the fully developed junior college being from 150 to 200 students.

VI. STANDARDS OF WORK

The work of any course in a junior college should be equivalent in quantity and quality to the work of a similar freshman or sophomore course in a standard college.

The regular credit work of a student shall be fifteen hours a week, one additional hour being allowed if desired. Except in the last semester before graduation, extra work should be permitted only in case of superior scholarship and in no case should a student be permitted to register for more than twenty hours of credit work a week.

The length of the recitation period and the number of laboratory periods counted as one class period should be in harmony with the practice of standard colleges.

VII. LIBRARY AND OTHER EQUIPMENT

The library should be properly catalogued and should be under the charge of a competent librarian. The library and laboratory facilities should be adequate for the courses offered.

A properly equipped study room should be provided for the exclusive use of junior college students.

VIII. MISCELLANEOUS

When a secondary school is connected with a junior college, the secondary school must be accredited by the North Central Association, if the junior college is to be approved.

The location, buildings, and equipment of a junior college should be such as to insure hygienic conditions.

The academic year shall not be shorter than the academic year of standard colleges.

The system of records should show clearly the secondary and college credit of each student. Original credentials brought from another institution should be retained by the junior college.

Junior college credit earned in night school classes and Saturday classes or by correspondence or other forms of extension work or by examination may not be used in meeting requirements for a degree from a state institution of higher learning.

Not more than one half of the collegiate requirements for a degree from a state institution of higher learning may be satisfied by credit earned in a junior college. When the combined credit earned in a junior college and in any other institution of collegiate rank is sufficient to satisfy one-half of the collegiate requirements for a degree from a state institution of higher learning, further credit toward a degree may not be earned in a junior college.

A minimum of sixty semester hours shall be required for graduation from a junior college.

The diploma granted for completion of a junior college curriculum shall not be called a degree.

PROVISIONS OF THE IOWA LAW RELATIVE TO PUBLIC JUNIOR COLLEGES

4217 Enumeration of Powers of Electors.

The voters assembled at the annual meeting or election shall have power to authorize the establishment and maintenance in each district of one or more schools of a higher order than an approved four-year high school course.*

Note: Section 4197, which authorizes a Board of Directors to call a special meeting of the voters of any school corporation does not list the proposition of establishing and maintaining one or more schools of a higher order than an approved four-year high school course as a proposition that can be submitted to the voters at a special election. Therefore, the only time said proposition can be voted on by electors is at the regular election on the second Monday in March.

4867b-1 Junior College (Passed by the Forty-second General Assembly in 1927.)

The board, upon approval of the State Superintendent of Public Instruction, and when duly authorized by the voters, shall have power to establish and maintain in each district one or more schools of higher order than an approved four-year high school course. Said schools of higher order shall be known as public junior colleges and may include courses of study covering one or two years of work in advance of that offered by an accredited four-year high school. The State Superintendent of Public Instruction shall prepare and publish from time to time standards for junior colleges, provide adequate inspection for junior colleges, and recommend for accrediting such courses of study offered by junior colleges as may meet the standards determined.

4873 Tuition (Passed by the Fortieth General Assembly in 1923.)

Every person, however, who shall attend any school after graduation from a four-year course in an approved high school or its equivalent shall be charged a sufficient tuition fee to cover the cost of the instruction received by such person.**

The law of 1927 was amended by the Forty-fourth General Assembly which met in 1931, limiting the establishment of public junior colleges to districts with a population of 20,000 or more. The amendment reads: "No public junior college shall be established in any school district of less than twenty thousand."***

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* Code of Iowa, 1931, Section 4267, p. 554.
** Code of Iowa, 1931, Section 4273, p. 554.
*** Code of Iowa, 1931, Section 4267b-1, p. 554.