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Title of Study: A Study of the Comparison of Academic, Special, and Industrial Education Grades in the Ponca City Public Schools

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Scope of Study: The purposes of this study were to compare academic subject grades and special subject grades with those of industrial education in the Ponca City Public School System; and to check the effectiveness of the method of grouping seventh grade students by the actual achievement made in the elementary schools of Ponca City. For this study, academic grades will be English, mathematics, special studies, science, foreign languages, and commercial. Special subjects will be vocal music, instrumental music, physical education, and driver education; and industrial education grades will include industrial arts, trade and industrial, diversified occupations, and vocational agriculture. The group of boys entering the Ponca City Junior High School the year of 1945-46 was selected for this study. They were divided into eight classes by the actual achievement made in the elementary schools. Tables were prepared showing grade distribution and grade point averages by classes. Graphs were constructed showing a comparison of academic, special, and industrial education grades. The study includes all grades made in the junior and senior high schools until the time of graduation, or until such time they were dropped from the Ponca City Schools.

Findings and Conclusions: Three conclusions are reached by this study:

- (1) That in a comparison of academic subjects, special subjects and industrial education subjects, there is a tendency for the special subjects to have the highest grade point average, industrial education subjects to have the second highest grade point average, the academic subjects to have the lowest grade point averages;
- (2) It is indicated that the needs of the pupils can be more nearly satisfied by the method of academic achievement grouping, and
- (3) that there is a general trend for students with lower I. Q.'s to more nearly work to the peak of their scholastic capacity compared to their I. Q.'s, than those students with higher I. Q.'s.

ADVISER'S APPROVAL

C. E. Hoffman

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A STUDY OF THE
COMPARISON OF ACADEMIC, SPECIAL, AND
INDUSTRIAL EDUCATION GRADES
IN THE PONCA CITY PUBLIC SCHOOLS

By

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Bachelor of Science in Education
Southwestern Institute of Technology
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and Engineering Shopwork

Oklahoma Agricultural and Mechanical College

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INDUSTRIAL EDUCATION GRADES
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Dedicated to my Father and Mother

Mr. and Mrs. Walter P. Smith

CHAPTER I

THE PROBLEM

Achievement in most all schools in the United States today is measured by one of several systems of grading. While there has been much controversy regarding grades, and grading systems, schools and parents alike look upon them as a measure of accomplishment in a field of study. Many honors are bestowed upon students making the highest marks; the valedictorian of a graduating class is usually the member of that class with the highest grades, many scholarships to colleges and universities are granted by this measure, and honorary fraternities and sororities have been organized where grades represent the key to membership. A passing mark in the elementary schools and on through high school determines whether the student goes to the next grade, or is failed.

Colleges require a "C" average for undergraduate work leading to a degree, and a "B" average for the advanced degrees. Even after graduation, transcripts of grades are required with applications for employment with many firms, so that they are one of the important evaluations of a student's success while in school. In many cases, the start of his business or working life is determined by these same grades as they may mean the difference in obtaining a wanted position or losing it to some one better qualified, academically speaking. Since so much importance seems to be attached to this method of expressing achievement, it is felt by the writer that this comparison of grades is a worthwhile and important study.

The Problem Stated. The title of the study is, A Study of the Comparison of Academic, Special, and Industrial Education Grades in the

Ponca City Public Schools. The group of seventh grade boys enrolling in the Ponca City Junior High School for the school year of 1945-46 has been selected for this study. Their achievement, as measured by grades, is to be studied and reported from the time they entered the junior high school until they finished high school, or dropped from the rolls of the Ponca City schools.

Limitations. No attempt is made to add to the original rolls the names of any student enrolling in the Ponca City Junior High or the High School during the period of this study which includes the school year, 1945-46 through the school year, 1951-52. An allowance of one year was made over the six years required for completing the work so that the study might be completed in the case of failures.

Purpose of the Study. It is the purpose of this study to compare grades made in subjects directly related to industry with those of the academic and special subjects. A secondary purpose is to compare the achievement grouped classes of students entering the Junior High School. This method of grouping will be considered in detail in Chapter IV.

Origin and Need for the Study. The idea for making a study of this type originated in an industrial arts meeting in the Ponca City Junior High School. Academic grades and industrial arts grades have often been discussed in these meetings. Also, some have the idea that the "so called dumb students" should all be steered into the industrial arts program. The writer believed that in making this study, he would have some concrete evidence available for these discussions, as well as a good overall picture of the industrial arts program in the Ponca City Schools.

Definitions of Significant Terms. To understand some of the terms used in reporting the results of this study, the following explanations

are given:

Academic subjects--for the purpose of this report, English, Mathematics, Science, Social Studies, Foreign Language, and Commercial work will be considered academic subjects. (When considering commercial work which is really a field within itself, it was decided to list it with academic subjects because it was felt that it more nearly adapted itself to this field than to the other two classifications.)

Special subjects--the listing of special subjects includes Vocal Music, Instrumental Music, Physical Education, Art, and Driver Education.

Industrial education subjects--those subjects in this classification are; industrial arts, trade and industrial, diversified occupations, and vocational agriculture.

The Lester Study. The writer found no study comparing grades as it is proposed in this problem. A thesis entitled, A Comparison of Scholastic Achievement of Elementary School Groups in Ponca City Junior High School, written by Ralph Lester does show a comparison of academic grades and special grades. In Mr. Lester's study, industrial arts is considered a special subject and the study is made in only the seventh and eighth grades. The purpose of this study was to find whether or not the students of some grade schools were receiving better "educational preparation" than others. Three conclusions were reached: "Elementary school groups in the Ponca City system do not show sufficient differences in scholastic achievement over the three year period to conclude that any appreciable differences exist.....Elementary school groups in the Ponca City system rank higher in grade point averages than the elementary school groups from other towns.

All elementary school groups rank higher in scholastic achievement in special subjects than in academic subjects. (16, page 54) A study of the tables where academic and special subjects are broken down to individual subjects show in general that the industrial arts grade point

average is a little lower than the other listed special subjects and a little higher than the academic subjects.

Plan For Presenting Material. The data have been organized into tables and graphs for presentation. These will be discussed and interpreted. The group of boys is divided into eight classes according to their actual achievement in the elementary schools. The classes are numbered from one to eight, and these numbers refer to the same classes throughout the complete study. The names making up these classes are taken directly from the industrial arts rolls found on the permanent record sheets in the Junior High School office for the year 1945-46.

Before reporting on the results of the study, a history and philosophy of industrial arts will be considered. It will be shown that handwork is one of the oldest subjects in our history. The movement of manual training, springing from sloyd and the Russian system, will be traced through its evolution until the time when industrial arts took its place in the public school systems of the United States as a phase and important part of general education in a highly industrialized society.

CHAPTER II

THE ANNALS OF INDUSTRIAL ARTS

Industrial arts, as it is taught in the public schools today, has evolved through many changes from its early beginning. From the time of the savage until the present day, the skills of the hand have been extremely important in the survival of the peoples of the world. It was necessary for the savage to employ all his skills to combat the elements of nature and to protect himself from his enemies. Today, the necessities of life and the comforts of living are still dependent upon the skills of the industrial worker. So that a better understanding of this development may be had, a brief historical background is presented.

PART A

EARLY HISTORY OF HANDWORK

The savage learned through unconscious imitation. The second stage of learning was reached when savagery turned to barbarism. The barbarian, through the control of fire learned to cook his food, smelt metals, and make useful tools. These crude skills were passed on by conscious imitation. From this method of passing on knowledge, the apprenticeship system was developed.

Early Attitudes Toward Handwork. The Jews considered it a duty to teach their sons a trade. From Talmud, the traditional law of the Jews, Bennett cites the following: "As it is your duty to teach your son the law, teach him a trade." (3, page 13) It was their belief that unless the son was given an honest means of making a living, that he was on his way to become a thief or robber.

The Greeks had an entirely different outlook on handwork. They held such labor in contempt, and the slaves and lower classes did all the manual work. The early Christian monks made a "fetish of manual labor." The Benedictines, led by St. Benedict (480-543) required manual labor as a part of each daily routine.

Early Schools. It was largely through the efforts of Cassidorous, an Italian statesman and historian who later became a Benedictine monk in 538, that the art of book making was advanced. Having developed the art of book making, the monks copied manuscripts in long hand and bound them into books. They thereby established the only libraries of the age. Both young and old were attracted to their Monastic schools because of the opportunities of using these libraries. Hence, they produced the only scholars of the period. Outside the Monastic schools, apprenticeship in the crafts had become the principal method of learning for the middle class. "During that time the master was supposed to give to his apprentice the same moral, religious, and civic instruction that he gave his own son." (3, page 21) Methods of instruction varied, but secrets of the trades were passed on to the apprentice.

New Ideas Of Education. With the mastering of the art of printing (1423-1480) and the Protestant Reformation, new life was given to educational methods. Martin Luther (1483-1546) advocated state-supported education for all children. Rabelais advanced his ideas of reform in education by writing two novels, Gargantua and Pantagruel. Rabelais, Comenius and Bacon saw the advantage of working with the things at hand to approach the abstract or the unknown. Rabelais did nothing of importance to advance his theories, but his influence on the thinking of Locke and Rousseau was his contribution to education. Mulcaster (1531-

1611) was the first to advocate drawing as one of the fundamental studies.

The Contributions of Rousseau. Jean Jacques Rousseau (1712-1778) with the writing of Emile was the cause of an upheaval in educational thinking. The book was written about an imaginary son to express his ideas on education. In referring to handwork, he speaks of Emile learning more in an hour by actual experiences than he would from a whole day of verbal instruction. Rousseau believed that experience was the best teacher, and as a result of this belief would have everything taught by action. In speaking of this, Bennett writes: "His recognition of the fact that manual arts may be a means of mental training marked the beginning of a new era of education." (3, page 81) Pestalozzi probably owes his influence on education to Rousseau. Eby and Arrowood in writing of Rousseau and Pestalozzi say:

Both were dreamers, and both were moved by a deep sympathy for downtrodden men. The one influenced education profoundly through his books, but was a failure as a teacher; the other exerted little power through his writing, but, by his methods of teaching, won the world for universal public education. However, had there been no Rousseau, we probably would never have heard of Pestalozzi. (8, page 619)

Rousseau considered agriculture, smithing and carpentry the most respected of professions.

Pestalozzi, The "Father of Manual Training." Johann Heinrich Pestalozzi (1746-1827) was unsuccessful in practically everything he undertook, and yet through his failures probably had more influence on education than any other man up to his time. In writing of his failures, Eby and Arrowood state:

Out of the depth and bitterness of his failures, he somehow succeeded in awakening the modern world, as no other was able to do, to a faith in the school as the supreme instrument for saving man from misery and prostration due to his own inaptitude. (8, page 619)

He believed that there were two methods of teaching, one from words to things and the other from things to words. His was the second one. Anderson states his chief aim as: "Pestalozzi's central aim was the elevation through education of the lower classes. For these he considered industrial training of fundamental importance." (1, page 76) His first intent was to teach manual arts as a means of making a living, but later came to consider them as a means of general education.

Effects Of The Industrial Revolution. With the invention of the steam engine, the spinning jenny, the loom, the cotton gin and other labor saving machines, the standard of living for the craftsman was changed. No longer was he paid for his craft, but was driven in most cases to work in the factories along with his family beside unskilled workers. So that he might be near his work, he was forced to move to town where conditions were deplorable. As a result, the apprenticeship method of instruction was no longer effective. Children, of necessity, worked alongside their parents. Eventually the working conditions, and terrible living quarters brought about child labor laws and labor reforms.

The Mechanics Institute Movement. The year of 1800 is usually cited as the beginning of the Mechanics Institute movement. Dr. Birkbeck of London conceived the idea of giving scientific lectures to the working classes on new inventions and the mechanical arts. Out of these lectures and as a result of them, an independent institution, the Glasgow Mechanic's Institution was formed. Chemistry, mechanics, geometry, arithmetic, farriery, and architecture courses were taught with the drawing courses being very successful. This movement made rapid progress in both England and America.

Industrial education had advanced from the savage and barbaric stages, through apprenticeship, and as a result of the Industrial Revol-

ution, the Russian system and educational sloyd were beginning to be organized.

PART B

MANUAL TRAINING AFTER 1870

Progress of teaching manual arts was very slow during the apprenticeship period. It is not known for certain who first recognized the fact that the manual arts could be taught in schools in the same manner as the other subjects, although some authors give the credit to Pestalozzi. Progress was much more rapid after this new idea was put into practice.

The Russian System. During the year 1830, a School of Trades and Industries was established in Moscow. This was reorganized in 1868 and became known as the Imperial Technical School. The length of the course was six years, and the purpose of the school was to train civil engineers, mechanical engineers, foremen, draftsmen, and chemists. Some theory was given, but most of the time was spent in building machinery and filling contracts for industry. The labor was furnished partly by hired help and by the students. It was soon found out that the school was not accomplishing the desired results, because of the lack of a system of organized instruction. This led to a new system worked out by Victor Della Vos and his shop assistants.

Each course of instruction set up a series of exercises to be finished and no reference was made to any useful completed article. In teaching the course three separate divisions were made. The first consisted of learning the names, uses, and how to care for the tools used. During the second period the students learned to combine the exercises of the first period and during the third period, parts of, or completed mechanisms were finished.

The Sloyd Movement. The sloyd movement originated in the homes of the Swedish. Candle making, weaving, knitting, the making of tools such as axes, hammer handles and the like were crafts carried on in the homes. Arts, skills, patriotism, and discipline were taught in this manner. Before the Industrial Revolution, the people found a ready market for these home made articles, but with the competition furnished by machinery, home sloyd disappeared. There was another cause which helped do away with home sloyd and that was the free production, sale of, and the use of alcoholic drinks. The people became engaged in its manufacture, and the younger men spent their time away from home in places where liquor could be obtained. As a result of these conditions, the health of the people suffered, crimes, and public offenses increased. The leaders of the country realizing these conditions and knowing that home sloyd would not solve the problem, attempted to establish schools where sloyd could be taught. These early schools were patterned after the old home sloyd and became work shops with the teachers acting as foremen.

The next step in sloyd was carried out by Cygnaeus of Finland. After being appointed the first director of education in Finland, he traveled extensively for fifteen months studying educational methods all over Europe. After returning, he established a normal school at Jyvaskyla to prepare teachers for the public schools to come later. He is said to be the first to regard sloyd as a part of general education in the public elementary schools.

Educational sloyd originated in Sweden. August Abrahamson and his wife opened a sloyd school for boys and girls on their estate at Naas. A year later his wife died and Abrahamson asked his nephew, Otto Salomon to become his companion and helper in the work already started. Salomon

believed in the importance of sloyd instruction and with the help of Abrahamson, an industrial school was opened in 1872. This school was intended for boys who had finished their work in the folk schools. A year later a school was opened for girls. Up to this time, sloyd was still on an economic basis. Educators of the times could not see sloyd in the schools because they said that a trade was not a part of general education. On the growing demand for sloyd instruction, Salomon, after visiting Cygnaeus in Finland, made a scientific study of sloyd and developed what he called educational sloyd. There were three general characteristics of educational sloyd; "(1) making useful objects, (2) analysis of processes, and (3) educational method." (4, page 64)

Educational sloyd differed from the Russian system in that all exercises were omitted from the work and processes and skills were taken up as they were needed in completing the finished product.

PART C

INDUSTRIAL ARTS IN THE UNITED STATES

The first schools in the United States grew out of the church as a direct result of the Protestant Revolt in Europe. The early settlers came to this country for freedom of worship, so the establishment of parochial schools was to be expected. In 1642 and 1647 laws were passed in Massachusetts which laid the foundation for all the American Public school systems. These had to do with compulsory education, standards set and enforced by the state. As early as 1685, Thomas Budd proposed a plan for free public education to include art or a trade to be selected by the student. While this plan was not carried out, it shows a trend of thinking in the early colonial days.

Early Training Schools in America. Perhaps the earliest schools in

America giving handwork training were the Franciscan schools in New Mexico, which resembled the Monastic schools of Europe. As early as 1630, over 60,000 natives had been converted and grouped into twenty-five missions, many of which had schools. During the Rebellion of 1680, all these schools along with their records were destroyed. Similar schools were established in California and Texas a few years later. These were mission schools teaching various crafts and were designed to meet the needs of the converted natives.

Apprenticeship in America. The Puritans believed that idleness was a sin and that industry was a virtue, and this applied to both sexes. This, along with knowing that skills were necessary to the well being of the colonies, brought about the passage of apprenticeship laws. These laws were similar to the laws of the mother country, requiring all children to be placed in apprenticeship, if the parents could not provide for their education. In addition to a trade, reading, writing and later, ciphering were taught to boys, but only reading and writing to the girls. With the Industrial Revolution, the system gave way to factory methods as it did in Europe.

Industrial Schools of the Early Nineteenth Century. The Mechanic's Institute movement of England moved to America in 1820 with the forming of the General Society of Mechanics and Tradesmen of the City of New York which opened a library for apprentices and formed a "mechanics school." The Franklin Institute of Philadelphia was incorporated four years later. The course of study in this school consisted of English, classical studies, modern languages, and mathematics and practical sciences. In the same year 1824, Stephen Van Rensselaer established the Rensselaer School at Troy, New York. This was the first engineering school, and the first graduate school in America.

The Land-Grant Act of 1862. The land grant act grew out of a demand for higher places of learning where science and practical sciences could be combined. Justin S. Morrill, a member of the House of Representatives presented the bill three times before it finally became law. The first time, it failed to pass the senate, the second time it was vetoed by President Buchanan, but the third time it was signed by President Lincoln and became effective July 2, 1862. By the terms of this act, 30,000 acres of public land were granted per senator and representative in congress for the purpose of providing agriculture and mechanical colleges.

Woodward and Runkle. Calvin Milton Woodward (1837-1914), who became known as the "great champion of manual training," was a mathematics instructor. He became a shop teacher when he came to realize how little his classes knew about tools and their uses. Students upon graduating were having to spend around two years in apprenticeship before they could find jobs because they knew nothing about the practical side of engineering. This led both Dr. Woodward and Dr. Runkle to advocate shopwork as a part of the engineering courses.

Dr. Runkle (1822-1902), president of the Massachusetts Institute of Technology, attended the Centennial Exposition in 1876 and there for the first time saw the Russian system exhibited. He was very much impressed deciding that it was the solution to his problem. Upon returning, he recommended that the Institute establish shops for instruction in the mechanic arts. He also later formed a new secondary school for those who wished to enter industrial pursuits rather than be engineers.

As early as 1873, Woodward was advocating the teaching of hand work as a part of general education. Under his influence a new movement,

separated from that of the East, was developing in St. Louis. After the Centennial Exposition, he was instrumental in establishing a school of manual training. Although contrary to his belief, he was forced to make the school mostly vocational in order to raise the necessary funds. This school also resembled the Russian System. "In the St. Louis school, the teaching of mechanical processes was carried on through the media of exercises and models of some intrinsic value but frequently lacking in boy interest." (10, page 46) Later through the influence of "manual arts" and the sloyd movement, articles of more interest were included in the course of study, but many of the exercises were retained.

The Movement of Swedish Sloyd to the United States. During the year of 1886, Gustaf Larsson was brought from Sweden to the United States to introduce sloyd into the schools of Boston. A school of this type was established in 1889. "Up to this time the manual training had been crude and unorganized and inclined to copy the Russian work of the high schools." (22, page 31) As was to be expected, the models and projects of Sweden did not fit into the American homes, but before long the program was made to conform with the needs of youth in this country.

Influences of Herbart. The Froebel system indirectly is probably responsible for the term "industrial arts" as it is used today because it was the reaction against the formalism of this system that caused the kindergarten revolt. At about this time, American teachers having studied at the University of Jena under Herbart, were returning to the United States with a new conception of the meaning of manual training. Herbart looked upon manual instruction as a means of teaching the other conventional subjects in the schools.

Educational Leadership in the United States. John Dewey accepted

the Hebartian theory that manual training, at least for the lower grades, should be a method of teaching. "He would make the industrial occupations so broad and rich in related content that they would very readily and naturally become the basis for instruction in the so-called other subjects. (4, page 452) Dewey found other leaders ready to accept this philosophy. Charles R. Richards was one who believed in making the school life more real. In 1901, while addressing the National Education Association on the subject "Handwork in the Elementary School," he made this statement:

In relation to the school interests, or more specifically to the course of study, handwork represents emphatically a method rather than subject matter of instruction;..... On the side of the pupil, handwork is a medium of expression in terms of form, color and material; in its relation to social life, it is essentially a means of interpreting art and industry. (4, page 453)

In 1904, Professor Richards in an editorial written for the Manual Training Magazine suggested that the term Industrial Arts be substituted for manual training because of the change in view point leaving behind the disciplinary thought of manual training.

Frederick G. Bonser will long be remembered for his definition of industrial arts:

The industrial arts are those occupations by which changes are made in the forms of materials to increase their values for human usage. As a subject for educative purposes, industrial arts is a study of the changes made by man in the problems of life related to these changes. (20, page 5)

Bonser believed in the philosophy of Dewey in that industrial arts was a method of teaching, but added that it must justify itself on the same basis as other school subjects.

Manual Training to Industrial Arts. Manual training had now moved through two of the four stages listed by Vaughn and Mays as the ; "Russian

or abstract stage, the sloyd stage, the arts and craft stage, and the industrial stage. Plain American Johnny Johnson had in one brief decade gone through the double metamorphosis from Yonny Yonson to Yonsky Yonsovitch." (22, page 34)

The Arts and Crafts stage came about by a change in the trend of thinking to place more emphasis on design, art and beauty and less on just mechanical jobs. As a result, it became almost a case of the "blind leading the blind" for there were no teachers trained to give this type instruction. However, some healthy results grew out of the movement. Projects became more adaptable to the American home, there developed "some originality of thought and planning," and the type projects being made were expanded many times.

The fourth stage was, to some extent, a result of the first World War. A shortage of industrial workers brought about the attempt to "industrialize and vocationalize" shop work in the schools. The feeling of this time was that school shop training should provide information concerning materials, methods, processes of manufacturing, and job opportunities in industry. Thus, the term "industrial arts" has almost completely replaced the term manual training.

Shop Instruction Plans. Four methods of presenting shop work have developed in recent years. Dr. William L. Ettinger, a former Superintendent of Schools of New York City, advanced the unit plan. This is a plan of rotating the students through several shops where only one subject is taught. This plan is used primarily in the larger schools and is most adaptable to the Junior High School. Different types of rotation are used, but usually the seventh and eighth grades are required to participate in the program while it is optional for the other grades.

The Gary Plan was presented by Superintendent William Wirt of Gary, Indiana. His idea was to give the students industrial experiences and instruction from skilled tradesmen.

The latest real development is the General Shop Plan advanced by Russell and Bonser. This plan has made it possible for the smaller schools to include into the program most of the courses taught in the larger schools. It is the most economical way of presenting a variety of industrial arts subjects, because of the "pupil teacher ratio" and the conserving of space. It also has one other big advantage over the unit type shop in that a closer correlation between subjects can be obtained.

The fourth plan is the Pittsburgh Plan and is a combination of the unit shop plan and the general shop plan. Under this plan, the boy is placed into the general shop until his interests and aptitudes are discovered after which he can pursue them in the unit shop.

Teacher Training. With the increasing demand for teachers with at least a Bachelor's degree and preferably a Master's degree in manual training, colleges began to offer professional courses in the field of manual training. These courses differed to some extent because of the difference in equipment and the qualifications of the faculty. Columbia University was the first of these to offer a degree in manual arts. Others following close were Chicago University, and the University of Miami. Over two hundred colleges and universities now offer degrees in industrial arts education.

Professional Associations. Professional spirit among the teachers of manual arts led to organizations working to advance the profession. In December, 1882, one of these was organized being called the Industrial

Arts Teachers' Association. It set a very fine example for others following it by its high standards and accomplishments. Other early organizations were: The Manual Training Teachers' Association of America, 1894; the American Manual Training Association, 1896; Western Drawing Teachers' Association, 1897; and the Manual Arts Conference held in 1908 under the leadership of Robert Selvidge, William T. Bawden, Charles A. Bennett, and others. Many of the policies through the years have been set by this conference which has now become the Industrial Arts Conference. Today, there are local, state, and national organizations working to advance the profession of industrial arts.

"Teachers are too prone to look on industrial arts only for the part directly related to some trade. Industrial arts is more than this. It is the only representative of industry in the average child's life and as such must increase the range of his interests." (21, page 258)

To acquaint the student with even a small part of the wide range of industrial experiences found in America today, every method and means that can be used by the industrial arts teacher must be applied.

CHAPTER III

PHILOSOPHY OF INDUSTRIAL ARTS

Industrial Arts, as it is interpreted now, is a comparatively new subject having been accepted as a part of general education within the last half century. However, when considered in the light of its beginning, when handwork was a necessity for every individual, it is one of the oldest activities known to man. The nation of today has become so industrialized that it is impossible to look about us without seeing or using some product of industry. The toys the child plays with, the automobiles we drive, the furniture in our homes, the radio we listen to, and the television we watch, are just a few examples of the developments during the past fifty years which have influenced the present philosophy.

PART A

PHILOSOPHY UP TO TWENTIETH CENTURY

From the beginnings of the history of man, the basic philosophy behind handwork of all kinds has been to train youth in ways of earning a living. This influence is still retained today as one of the objectives of industrial arts. Many early philosophers and writers were able to see more than this in training of this type, but it was not until the Russian system and the sloyd movements that manual training started through the period of development which led to the modern industrial arts program.

Early Philosophies. Bacon and Locke believed in training in arts and crafts for both the rich and poor. They thought that the rich should have a better understanding of the problems of the poor and that the poor could elevate their position in life by such training. One of the

objectives of industrial arts of today was seen by Locke, "Worthy use of leisure was one value John Locke saw in handwork." (13, page 180)

Rousseau in the middle of the eighteenth century wrote about realism as a method of education. Pestalozzi with the help of Fellenberg established schools in which the use of objects and manual labor were used as methods of instruction in teaching the traditional school subjects. "The development of handyman activities is not a product of modern educational thought. We see this aim advocated by Augustus Herman Niemeyer in the year 1799." (13, page 180)

Expanding Philosophies. With the Russian system, manual training took its first big step by becoming an organized program of instruction. Skills and manipulative processes were stressed, but interest in the work or the completion of a useful article was considered of little importance. Their slogan was "Instruction Before Construction." (22, page 27) It must be recognized that the program was developed under an autocratic and military government, and in many ways resembled a military organization. Discipline was stressed. "Rules, orders, dictation, and inspection were quite at home in this system. The outstanding fact concerning this system remains that it was the first to use scientific principles in analyzing the mechanic arts and basing courses of instruction on these analyses." (4, page 47)

Educational sloyd as organized by Salomon had three distinct characteristics. Of these the "educational method" is its greatest contribution to industrial education. Sloyd placed the emphasis on the job or completion of the article and thereby added interest to the course. The schools of Runkle and Woodward and others of this time retained the discipline part of the Russian system and it was to get away from this feel-

ing that Richards later advocated changing from the term manual training to industrial arts.

During the period of 1890 to 1900, manual training became manual arts. Emphasis was placed on enriching and broadening the program while stressing design and art work. At the close of this period, the influence of Dewey, Richards, and later Bonser formulated and clarified a philosophy which leads directly to the present day interpretation.

PART B

CURRENT PHILOSOPHY OF INDUSTRIAL ARTS

When the term industrial arts was first used, it was to take the place of the formalized instruction associated with manual training, but it has now grown so popular in this country "that it is coming to include all instruction in handicrafts for general education purposes, whether formalized or not." (4, page 455)

Definitions. To interpret the current philosophy, some definitions of industrial arts taken from different sources are quoted:

Industrial arts is one of the practical arts, a form of nonvocational education. It has for its purpose giving information about the experience in the use of tools, materials, and processes incident generally to the home and the manufacturing industry. (17, page 317)

Industrial arts is a phase of general education that concerns itself with the materials, processes and products of manufacture, and with the contribution of those engaged in industry. The learnings come through the pupil's experiences with tools and materials and through his study of resultant conditions of life. (14, page 224)

Industrial arts is the name applied to all forms of shopwork and industrial drawing taught in elementary schools, junior high schools, high schools and possibly in colleges when the chief purpose is general education and not specifically vocational in nature. This term was evolved during the early part of the 20th century and is almost universally used today to refer to non-vocational shopwork and industrial courses in the public schools. (15)

These definitions are essentially the same expressing the accepted principles of industrial arts, that it is non-vocational shopwork concerned with acquainting the student with industrial materials, tools, and processes of manufacturing.

Objectives of Industrial Arts. Objectives of industrial arts have not always been clearly stated and many differences of opinion were found in the early philosophies. Educators made some very severe criticisms, and it was even suggested by some that industrial arts be completely removed from the school program as it had no value of any kind to general education. As a result of differences in opinions and these criticisms, the Manual Arts conference met to standardize the purposes of this program. Later between the years of 1930 and 1937 the American Vocational Association committee on Standards of Attainment in Industrial Arts worked out and published the following objectives:

1. To develop in each pupil an active interest in industrial life and in the methods of production and distribution.
2. To develop in each pupil the ability to select wisely, care for, and use properly the things he buys or uses.
3. To develop in each pupil an appreciation of good workmanship and good design.
4. To develop in each pupil an attitude of pride or interest in his or her ability to do useful things.
5. To develop in each pupil a feeling of self-reliance and confidence in his ability to deal with people and to care for himself in an unusual or unfamiliar situation.
6. To develop in each pupil the habit of an orderly method of procedure in the performance of any task.
7. To develop in each pupil the habit of self-discipline which requires one to do a thing when it should be done, whether it is a pleasant task or not.
8. To develop in each pupil an attitude of readiness to assist others when they need help and to join in group undertakings (cooperation).

9. To develop in each pupil the habit of careful, thoughtful work without loitering or wasting time (industry).
10. To develop in each pupil a thoughtful attitude in the matter of making things easy and pleasant for others.
11. To develop in each pupil a knowledge and understanding of mechanical drawing, and the interpretation of the conventions in drawing and working diagrams, and the ability to express his ideas by means of a drawing.
12. To develop in each pupil elementary skills in the use of the more common tools and machines in modifying and handling materials, and an understanding of some of the more common construction problems. (19, page 22)

Not all of these objectives are claimed to be only objectives of industrial arts, as other subjects of school can claim some of them also. They do, however, show the trend of thought and accomplishments expected from the industrial arts program. Gordon O. Wilber in a report written in 1950 at the close of a 12,000 mile trip after visiting 40 colleges and universities had this to say about the future of industrial arts:

".....The writer returns home with the firm conviction that the industrial-arts profession is definitely looking forwardSome of the pressing problems appear to be the need for greater breadth and richness in laboratory experiences for prospective teachers, a greater emphasis on teaching students to think and plan, a concerted effort to encourage industrial arts at the elementary level, and also to make industrial arts available to girls as well as boys. (24. page 5)

Wilber, who is now (1951-52) president of the American Industrial Arts Association, as a result of his travels and close contacts with the program should have a very good understanding of the problems facing the profession now and in the future. It would be well for the industrial arts teacher to give some serious thought to these problems.

PART C

PERSONAL PHILOSOPHY

Broader and richer programs must be offered to the youth of today, if industrial arts is to accomplish its chosen objectives. Many parts

of the program should be opened to girls especially those pertaining to the consumer viewpoint. One of the big problems to be solved before the expansion of this program can become a reality is the increased cost, but if the predictions of Ward L. Myers are realized, "Industrial arts will have state and federal aid. The present trend in school support is to provide additional funds to activities which require additional expenditures. Any subject which offers as much in equipment, supplies, and activity as modern industrial arts cannot be cheap in terms of traditional school program." (17, page 318)

Accepted Definition and Objectives. To establish a personal philosophy of industrial arts it is necessary to have well in mind the meaning of industrial arts. It is believed by the writer that the definition here stated most nearly satisfies this meaning.

Industrial arts is a group of school subjects that contribute to the attainment of the goal of general education by furnishing guided experiences in the use of tools, materials and machines, and insights into those phases of industry that have become an important part of our social culture. (23, page 19)

In making this study, it is the opinion of the writer that the list of objectives stated is the most complete and the most meaningful of any of those considered:

1. Industrial Arts is complementary to other school subjects and provides opportunity to apply knowledge learned in other school subjects.
2. Develops an appreciation of applied knowledge and skills.
3. Provides a knowledge of industrial drawing, the language of industry, and methods of expressing ideas by means of drawings.
4. Contributes to later vocational efficiency.
5. Stimulates students' knowledge and appreciation of good design.
6. Instills a satisfaction in personal creative achievement.
7. Develops the ability to analyze a job into its processes and

organize them into correct procedure.

8. Contributes to consumer knowledge and induces an appreciation of the value of industrial materials and the need for their conservation.
9. Trains in industrial and home safety (including fire prevention).
10. Acquaints students with industrial information and induces a recognition of the standards of industrial attainment.
11. Develops avocation interests.
12. Trains individuals to be more resourceful in dealing with the material problems of life.
13. Stimulates correct attitudes toward an orderly shop and home and their environment.
14. Aids in making vocational choices.
15. Develops qualities of leadership.
16. Develops cooperative attitudes in work habits.
17. Develops an appreciation of the dignity and importance of the occupation of one's neighbor. (19, page 3)

Industrial arts under good leadership can look forward to a progressive future, realizing much in the enrichment of the program for the youth of America. "Programs of industrial-arts education face an exciting twenty years ahead. If we gear out programs to the pace of American industry we cannot miss the boat." (17, page 318)

CHAPTER IV

REPORTING RESULTS OF THE STUDY

Industrial arts as a part of general education is closely related to the other subjects, both academic and special. When a boy takes home his grade cards, do they show a correlation between his industrial arts or industrial education grades and his other subjects? Does a parent wonder why his son should have an A in English and a C in industrial education, or why he should have a C in English and an A in industrial education? It is the purpose of this chapter to present material showing a comparison of grades in the Ponca City Junior High School, and the Ponca City Senior High School.

PART A

BACKGROUND OF REPORT

To furnish a background for understanding of this study, it is necessary that a short discussion of the curriculum of the Ponca City Junior and Senior High Schools be given. The method of grouping the students by the achievement or actual work accomplished in elementary schools will be explained in detail.

Curricula of Junior High and Senior High Schools. Boys of the seventh and eighth grades must follow a required curriculum, with a few exceptions. Required courses are; English, mathematics, social studies, science, vocal music, physical education, and industrial arts. It is possible for a student to be excused from physical education by furnishing a written statement from a doctor that he is not able to participate in this type activity. Instrumental music may be substituted for physical education and vocal music, or it may be taken two or three times a week

for vocal music leaving the student free to take physical education the other days.

The industrial arts program consists of four unit type shops which are; mechanical drawing, electricity, woodwork, and metal work. The student entering the seventh grade at the time of this study was required to take metal work one semester and woodwork the other semester and during the eighth grade he took drawing and electricity, alternating with a semester of each.

The required subjects of the ninth grade are English, practical mathematics or algebra, and social studies. Elective subjects include science, latin, physical education, vocal music, instrumental music, art, metal work, woodwork, mechanical drawing, electricity, radio, and vocational agriculture.

The curricula of the high school leads to four types of diplomas; college preparatory, general, commercial, and vocational. Two types of courses are given under college preparatory curricula, one for arts and sciences and one for engineering. Trade and industrial, vocational agriculture, and diversified occupations are listed under vocational education curricula.

The industrial arts courses taught are; mechanical drawing I, mechanical drawing II, electricity, machine shop I, machine shop II, printing I, printing II, woodwork I, and woodwork II. Trade and industrial education includes; trade woodwork, trade drafting, trade electricity, and trade machine shop. The diversified occupations program consists of academic subjects in the morning and a half day job training. Vocational agriculture is offered in the ninth grade, but the diversified and trade and industrial programs do not start until the junior year as far as the

shop courses are concerned. During the sophomore year, industrial arts subjects are required for students in the trade and industrial curriculum.

Grouping of Classes. It was mentioned in Chapter I that students entering junior high school are grouped by achievement. When the records of the elementary schools are sent to the junior high school, they are listed in the order of the highest achievement to the lowest. There are seven elementary schools in Ponca City, so that there would be seven lists of this kind. The principal of the junior high school makes up his schedule by class numbers and decides how many classes are going to be necessary and the number in each class. It should be made clear here that the I. Q. of the student does not enter into the method of grouping in any way.

Individuals of superior achievement are placed into the number one and two classes until they are filled. Classes one and two then should be of equal ability. Then the next two classes of less superior individuals in achievement are filled and so on down until the lists are depleted. At the time of this study, there were eight classes. The system is flexible, and many times skips are made in the lists to keep a balanced number of girls and boys in each class. Also, special scheduling sometimes places a student into a group in which he would not be placed ordinarily by achievement. When students are enrolled during the year from other systems, they are usually placed in an average group, the feeling existing that he will not be too far out of place whether his ability to do school work is high or low. At the end of the first year in junior high, the students are regrouped, if there is need for adjustment. However, for the purpose of this study, the original grouping will be adhered to throughout the complete problem.

Methods Used in Recording Material. Forms resembling the permanent record cards for both junior high school and senior high school were made up and mimeographed to record the information desired for this study. Two types of records are kept in the junior high, one is a permanent record sheet which is made out by the teacher for each class on which is recorded the individual record of each student in that class. The other is a permanent record card which contains a complete scholastic record of the student through junior high.

The names of all students enrolled in industrial arts for the year 1945-46 were listed by classes as they were taken from the permanent record sheets made out by the industrial arts teachers. After these rolls were completed, the grades, I. Q.'s, and ages were recorded for each student from his permanent record card. Other information recorded was the date leaving the Ponca City Schools and reason for leaving if available, and if a diploma was granted, the type, and year it was received. If the student attended college the first year after graduating, this information was recorded.

Conditions Affecting Study. To allow seven years for the completion of school for the group studied, it was necessary to select the class of 1945-46. It is realized that this year might not give the picture of an average year because it was just at the close of the war. The writer feels that two factors might have some influence upon the results of this study. One of these is the large number of drops and entries during this period. As a result of the war, homes had been temporarily broken up by fathers being in the service and by families working in defense plants. This report covers the period during which these homes were being re-established.

The second factor was the more or less run down condition of the shops. Materials were scarce and stocks depleted. Many machines were in need of repair, and others needed replacing. As a result the industrial arts program did not have as much to offer the boy as it did in normal times, a condition which might affect the interest shown by students in industrial arts all the way through school.

Grading Systems Used. Two entirely different grading systems are used in the junior high school and the senior high school. To understand the results of the tables, and graphs, these must be compared. The junior high school uses a six letter system and the high school a 5 letter system. For figuring grade point averages, the grade point values shown in the following table were used.

TABLE I

Junior High			Senior High		
Grade	Numerical Equivalent	Point Value	Grade	Numerical Equivalent	Point Value
A	95-100	6	H	97-100	3
A-	90-94	5	S ¹	90-96	2.5
B	85-89	4	S ²	85-89	2
B-	80-84	3	S ³	80-84	1
C	75-79	2	S ⁴	70-79	0
C-	70-74	1	U	Below 70	-1
F	Failing	0		Failing	

When the rolls were completed for this study, 175 names had been recorded. Of this number, six were dropped without receiving any grades and will not be considered any further. The study will be made of eight classes totaling 169 students divided as follows: class 1, 18; class 2, 18; class 3, 19; class 4, 21; class 5, 28; class 6, 26; class 7, 20; and class 8, 19.

PART B

THE RESULTS OF THE STUDY

Grade point averages will be used as the medium for comparison of subject matter. Grade distribution by classes in the form of tables are shown for each class and each year. Bar graphs are used to show the comparison of the averages of the academic, special and industrial education subjects. Other items of interest mentioned will be drops, and reasons for dropping, diplomas granted, and the number going on to college.

Achievement Comparison in the Seventh Grade. Tables II through XI show the distribution of grades for the classes 1 through 8 in the seventh grade. In examining these tables, it is found that all the A grades for English and mathematics were made in classes 1 and 2, while most of the A and A- grades were made in the first four classes. Looking further it is seen that very few F grades were made by the upper 4 classes, but most of them were made by classes 5, 6, 7, and 8. A general picture of the tables show that the most of the grades in classes range from A- to B-, those of classes 3 and 4, from B to C, Class 5 from B- to C-, and those of 6, 7, and 8 from C to F. A study of this distribution shows there is a declining achievement trend from class 1 to class 8.

Table X gives the distribution of the complete seventh grade group. It is interesting to note that approximately two-thirds of the grades in the academic subjects are found to be C's and below, and that about the same number of industrial arts grades range from B- to C-. Table XI shows the class averages in each of the different subjects. In figuring these averages through junior high school, the following method was used; an A, 6 points; an A-, 5 points; a B, 4 points; a B-, 3 points; a C, 2 points; a C-, 1 point; and an F, 0 points. On the basis of these values,

it will be noted that classes 1 and 2 average from a little over a B to a little under a B, with the exception of industrial arts which averages just slightly over a B-. This is the only comparison shown in all the tables where the academic grade is not lower than the industrial arts grade. Classes 3 and 4 average about half way between a C and B- to a little over a B-, with the exception of the special subjects which go up as high as a B. Classes 5 and 6 average from a little over a C to just over a C-. Seven and 8 average from a little over a C- to about half way between an F and C-. Attention is called to the fact that all classes of industrial arts averages range from a little over a C to a little over a B while the academic averages range from a little over a B to below a C-.

Graph 1 shows the academic, special, and industrial arts averages by classes. All class grades show a tendency to decline in about the same relationships as the class achievements decline. This is particularly pronounced in academic subjects which probably should be expected as the classes were grouped by their actual academic achievement in these subjects. Special subjects are consistently higher than both academic subjects and industrial arts subjects. The industrial arts subjects show a slightly lower average for classes 1 and 2 and for 3 about the same. For classes 4 and 5, industrial arts shows slightly higher averages when compared to the academic subjects, and they show a considerably higher average in the classes of lower achievement grouping. The conclusion being that in general, academic averages for the first two groups are higher than industrial arts averages; that they tend to balance in the middle classes, while they get higher than the academic averages in the groups of lower achievement.

Graph 2 is given showing the comparison of I. Q. and grade point averages. This table shows only a comparison of how each class worked according to the average achievement and average I. Q. of this group of classes. There is not meant to be any relationship between a definite grade point average and a certain point on the I. Q. scale. This graph shows in general that the higher grouped classes are not working as near to the peak of their ability as measured by their I. Q. as the lower achievement classes. This is probably to be expected as the students of the lower groups are pushed to near the upper limits of their performance capacity in order to maintain a passing grade while the higher performance groups are coasting along on their superior natural aptitudes.

TABLE II

Distributions of grades for class 1 for the year 1945-46. (Grade 7)

Subject	Number of Grades	Grade							Grade Point Average
		A	A-	B	B-	C	C-	F	
English	36	4	10	7	9	3	2	1	3.805
Mathematics	36	7	12	7	7	3	0	0	4.388
Science	36	2	12	11	11	0	0	0	4.138
Social Studies	36	3	10	6	10	5	2	0	3.722
Vocal Music	28	3	5	6	9	5	0	0	4.200
Instr. Music	8	0	3	4	1	0	0	0	4.200
Physical Ed.	28	1	8	9	9	1	0	0	3.964
Industrial Arts	36	0		10	8	7	3	2	3.083
Latin									
Art									

TABLE III

Distributions of Grades for class 2 for the year 1945-46. (Grade 7)

Subject	Number of Grades	Grade							Grade Point Average
		A	A-	B	B-	C	C-	F	
English	36	2	8	10	9	7	0	0	3.722
Mathematics	36	6	9	14	3	3	1	0	4.250
Science	36	5	11	11	5	3	1	0	4.194
Social Studies	36	12	13	5	1	3	1	1	4.638
Vocal Music	28	12	10	5	1	0	0	0	5.178
Instr. Music	8	1	0	4	3	0	0	0	3.875
Physical Ed.	28	1	4	12	10	0	1	0	3.750
Industrial Arts	36	0	10	9	7	5	3	2	3.333
Latin									
Art									

TABLE IV

Distributions of grades for class 3 for the year 1945-46. (Grade 7)

Subject	Number of Grades	Grade							Grade Point Average
		A	A-	B	B-	C	C-	F	
English	36	0	3	11	12	10	0	10	3.194
Mathematics	36	0	4	2	15	12	3	0	2.777
Science	35	0	3	12	8	11	1	0	3.142
Social Studies	36	0	4	9	14	7	2	0	3.444
Vocal Music	28	2	1	10	12	1	2	0	3.464
Instr. Music	8	1	3	4	0	0	0	0	4.625
Physical Ed.	34	0	7	9	14	4	0	0	3.558
Industrial Arts	36	0	2	6	7	13	8	0	2.472
Latin									
Art									

TABLE V

Distributions of grades for class 4 for the year 1945-46. (Grade 7)

Subject	Number of Grades	Grade							Grade Point Average
		A	A-	B	B-	C	C-	F	
English	39	0	0	5	5	16	11	2	2.512
Mathematics	39	0	4	5	19	15	5	1	2.615
Science	38	1	2	7	12	10	6	0	2.789
Social Studies	39	1	4	8	11	11	2	2	2.948
Vocal Music	36	0	7	9	11	9	0	0	3.388
Instr. Music	3	0	0	1	1	1	0	0	3.000
Physical Ed.	36	1	3	15	14	3	0	0	3.583
Industrial Arts	39	0	7	5	13	7	5	2	2.897
Latin									
Art									

TABLE VI

Distributions of grades for class 5 for the year 1945-46. (Grade 7)

Subject	Number of Grades	Grade								Grade Point Average
		A	A-	B	B-	C	C-	F		
English	55	0	0	2	4	18	25	6	1.472	
Mathematics	55	0	0	1	8	18	21	7	1.545	
Science	55	0	2	6	12	16	17	2	2.163	
Social Studies	55	1	5	8	13	12	13	3	2.527	
Vocal Music	48	0	1	5	24	14	4	0	2.687	
Instr. Music	8	0	1	1	4	2	0	0	3.125	
Physical Ed.	49	3	7	15	20	4	0	0	3.693	
Industrial Arts	55	1	2	5	6	16	25	0	2.078	
Latin										
Art										

TABLE VII

Distributions of grades for class 6 for the year 1945-46. (Grade 7)

Subject	Number of Grades	Grade							Grade Point Average
		A	A-	B	B-	C	C-	F	
English	52	0	0	2	4	12	15	19	1.134
Mathematics	52	0	0	3	3	12	11	23	1.076
Science	52	0	2	3	3	11	16	17	1.326
Social Studies	52	0	2	3	3	12	15	17	1.346
Vocal Music	52	0	2	9	18	12	9	2	2.750
Instr. Music									
Physical Ed.	49	2	4	17	22	3	1	0	3.352
Latin									
Art									

TABLE VIII

Distributions of grades for class 7 for the year 1945-46. (Grade 7)

Subject	Number of Grades	Grade							Grade Point Average
		A	A-	B	B-	C	C-	F	
English	36	0	2	0	3	0	12	19	0.861
Mathematics	36	0	2	0	2	4	4	24	0.666
Science	36	0	1	1	2	8	13	13	1.055
Social Studies	35	0	2	0	2	8	10	13	1.200
Vocal Music	34	0	0	5	9	14	5	1	2.352
Instr. Music	2	0	0	2	0	0	0	0	2.600
Physical Ed.	31	0	1	6	19	5	0	0	3.096
Industrial Arts	35	0	3	5	9	12	5	1	2.600
Latin									
Art									

TABLE IX

Distributions of grades for class 8 for the year 1945-46. (Grade 7)

Subject	Number of Grades	Grade								Grade Point Average
		A	A-	B	B-	C	C-	F		
English	38	0	0	0	2	7	7	22	0.710	
Mathematics	38	0	0	0	2	8	10	18	0.842	
Science	38	0	0	1	9	8	11	9	1.526	
Social Studies	38	0	2	1	8	4	8	15	1.421	
Vocal Music	34	0	0	1	7	13	11	2	1.823	
Instr. Music	4	0	1	3	0	0	0	0	4.250	
Physical Ed.	29	0	4	6	14	2	3	0	3.206	
Industrial Arts	38	1	1	5	7	13	10	1	2.315	
Latin										
Art										

TABLE X

Distribution of grades for the school year 1945-46. (Grade 7)

Subject	Number of Grades	A	A-	B	B-	C	C-	F
English	328	6	23	37	48	73	72	69
Mathematics	328	13	31	32	49	75	55	73
Science	326	8	33	52	60	67	65	41
Social Studies	327	17	42	40	62	62	53	51
Vocal Music	288	17	26	50	91	68	31	5
Instr. Music	43	2	8	21	9	3	0	0
Physical Education	284	8	38	89	122	22	5	0
Industrial Arts	327	2	31	60	75	82	67	10
Latin								
Art								

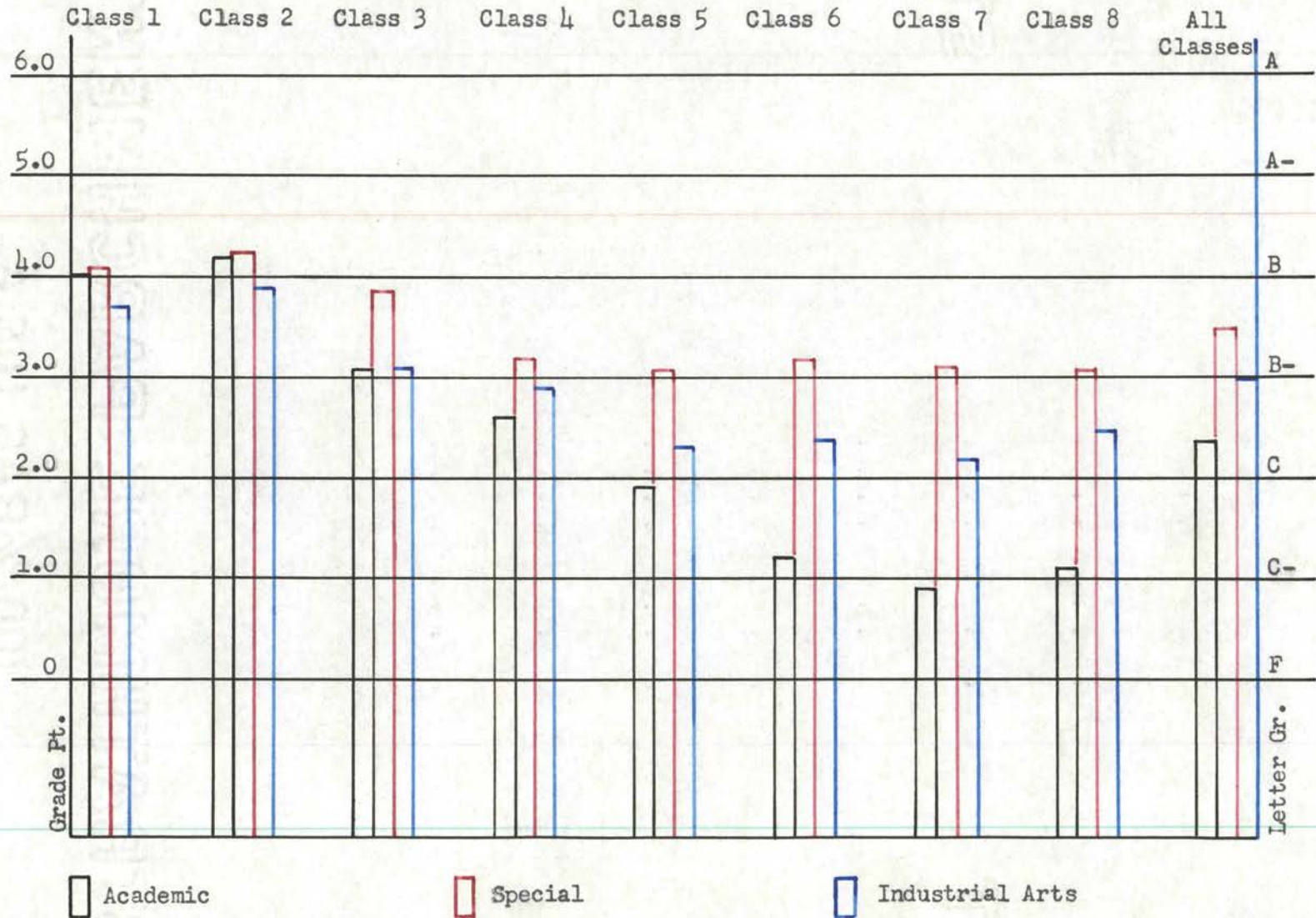
TABLE XI

Comparison of grade point averages for the school year 1945-46 (Grade 7)

	Subject	Class							
		1	2	3	4	5	6	7	8
Academic Subjects	English	3.805	3.722	3.194	2.514	2.512	1.134	0.861	0.710
	Social Studies	3.722	4.638	3.444	2.948	2.527	1.346	1.200	1.421
	Mathematics	4.388	4.250	2.777	2.615	1.545	1.076	0.666	0.842
	Science	4.138	4.194	3.142	2.789	2.163	1.326	1.055	1.526
	Latin								
Special Subjects	Vocal Music	4.200	5.178	3.464	3.388	2.687	2.750	2.352	1.823
	Instrumental Music	4.200	3.875	4.625	3.000	3.125		4.000	1.823
	Physical Education	3.964	3.750	3.558	3.583	3.693	3.714	3.096	3.206
	Art								
Industrial Education	Industrial Arts	3.083	3.333	2.472	2.897	2.018	2.884	2.600	3.206

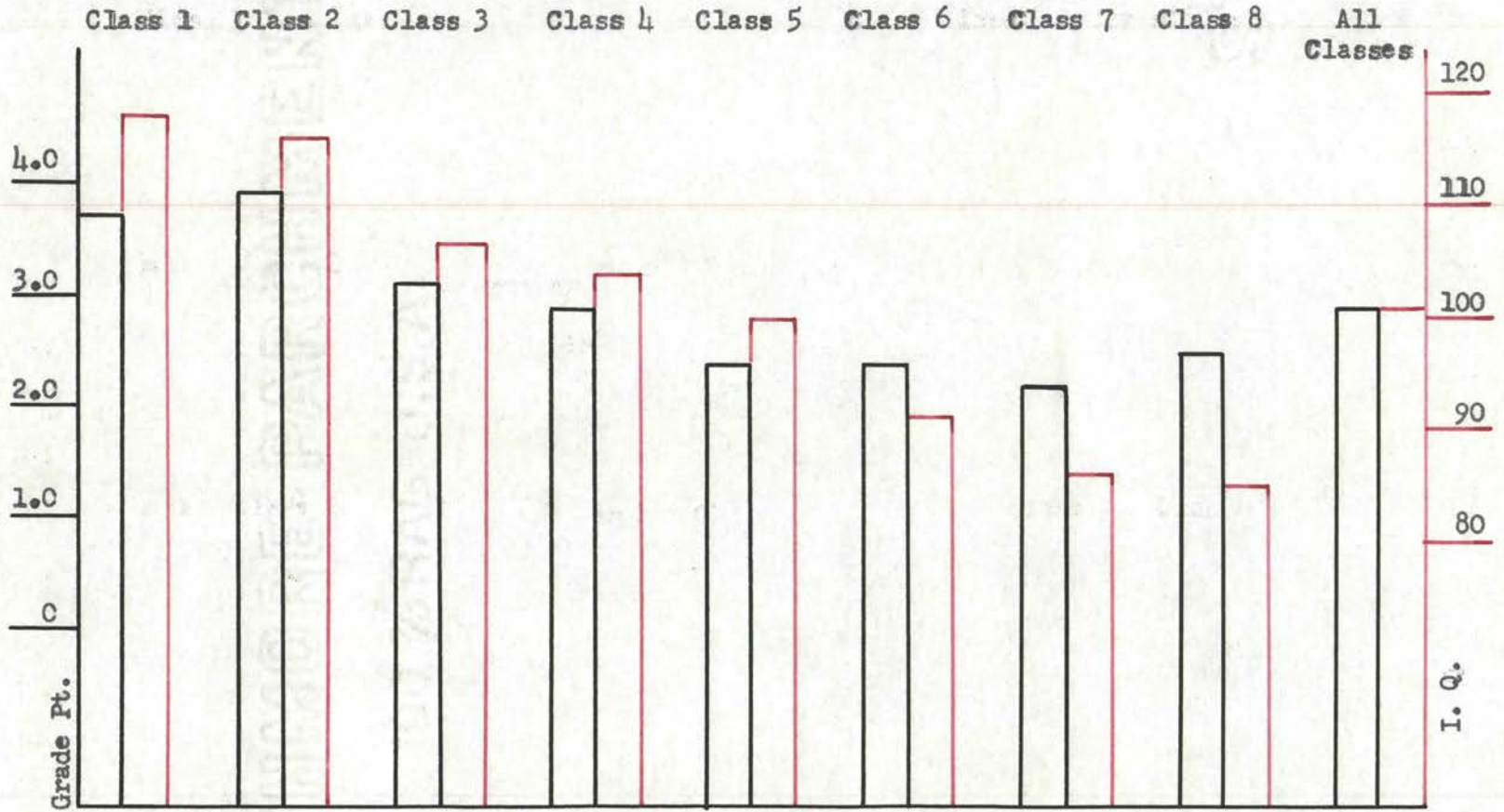
Graph 1

Comparison of grade point averages in academic, special and industrial arts subjects for the school year 1945-46 (Grade 7)



Graph 2

Comparison of grade point averages and I. Q. averages for the school year 1945-46 (Grade 7)



Eighth Grade Comparisons. As has been stated, this report covers only the original rolls. The names of students entering during the period of this report were not added to the rolls, so fewer and fewer grades will show in all of the classes as students are dropped for various reasons. Out of 169 pupils starting the seventh grade, forty seven were dropped from the rolls of the eighth grade shown in the following tables. Of these, 27 will be studied later under a retarded group heading. As can be seen by the tables covering the seventh grade, more students were failed than the forty seven mentioned, but by going to summer school enough work was made up by these students to permit them to stay in their regular classes.

Tables XII through XIX show the grade distribution of each class. Only one student was dropped from the first two classes and the majority of the grades for classes 1 and 2, as was shown in the seventh grade, are from A to B-. Classes 3 and 4 again show most of the grades above a C and up to a B. Most of the grades of class 5 are from C- up to B-, but 14 F's were made in English. Class 6 had the most drops, showing only four students still on the rolls for the eighth grade, and the majority of the grades made by these four are from C to F. Classes 7 and 8 while showing some drops still range in grades about the same as in the seventh, most of the grades falling from B- to F. The total eighth grade distribution is shown in Table XX. Here again, about half of the grades given in the academic subjects are a C or lower.

Table XXI shows about the same thing with reference to eighth grade academic grades as was shown by the seventh grade table (Table XI) of grade point averages. The averages are a little above a B to below a C-. However, the industrial arts averages in this table show a much closer

correlation to the academic grades, ranging from above a B to about half way between a C- and C. In studying Graph 3 it can be seen that special subjects grade point averages are still consistently higher than in the academic subjects, but class 1 has a higher average in industrial arts than in either the academic subjects or special subjects. Industrial arts averages are slightly higher than academic averages for classes 1 and 2, but considerably higher compared to the academic averages in the other classes.

Graph 4 shows again that the students with the lower I. Q.'s are more nearly working to the peak of their scholastic ability than are those with the higher I. Q.'s. It will be noticed that both Graphs 3 and 4 have started to level off, a condition that becomes more pronounced as the other grades are studied. This is probably a result of students leaving school who were not making passing grades.

TABLE XII

Distributions of grades for class 1 for the year 1946-47. (Grade 8)

Subject	Number of Grades	Grade								Grade Point Average
		A	A-	B	B-	C	C-	F		
English	36	7	8	10	8	3	0	0	4.250	
Mathematics	36	3	13	10	7	3	0	0	4.166	
Science	36	1	12	12	10	1	0	0	4.055	
Social Studies	36	2	7	13	11	1	2	0	3.777	
Vocal Music	26	2	3	10	8	0	3	0	3.615	
Instr. Music	10	2	2	6	0	0	0	0	4.600	
Physical Ed.	23	5	6	4	4	4	0	0	4.173	
Industrial Arts	36	8	14	7	6	0	1	0	4.583	
Latin										
Art										

TABLE XIII

Distributions of grades for class 2 for the year 1946-47. (Grade 8)

Subject	Number of Grades	Grade								Grade Point Average
		A	A-	B	B-	C	C-	F		
English	34	3	5	11	5	6	1	3	3.382	
Mathematics	34	4	2	13	9	2	3	1	3.529	
Science	34	0	12	10	8	4	0	0	3.882	
Social Studies	34	5	6	12	8	0	2	1	3.941	
Vocal Music	28	3	5	8	10	2	0	0	4.035	
Instr. Music	6	0	0	6	0	0	0	0	4.000	
Physical Ed.	28	3	5	11	5	4	0	0	3.928	
Industrial Arts	34	5	9	13	4	3	0	0	4.264	
Latin										
Art										

TABLE XIV

Distributions of grades for class 3 for the year 1946-47. (Grade 8)

Subject	Number of Grades	Grade							Grade Point Average
		A	A-	B	B-	C	C-	F	
English	29	0	1	1	7	11	6	3	2.000
Mathematics	29	0	1	2	8	8	8	2	2.103
Science	29	0	2	6	13	5	3	0	2.965
Social Studies	28	0	0	2	10	11	4	1	2.285
Vocal Music	23	0	2	2	13	3	3	0	2.869
Instr. Music	6	0	2	3	1	0	0	0	4.166
Physical Ed.	14	4	2	4	1	3	0	0	4.214
Industrial Arts	29	0	6	14	6	2	1	0	3.758
Latin									
Art									

TABLE XV

Distributions of grades for class 4 for the year 1946-47. (Grade 8)

Subject	Number of Grades	Grade							Grade Point Average
		A	A-	B	B-	C	C-	F	
English	32	0	1	3	14	8	3	3	2.437
Mathematics	32	1	1	7	5	12	4	2	2.566
Science	32	0	2	5	16	7	0	2	2.875
Social Studies	32	0	2	4	4	11	7	4	2.093
Vocal Music	30	0	2	6	13	8	1	0	3.000
Instr. Music	2	0	0	0	1	1	0	0	2.500
Physical Ed.	26	3	2	8	7	5	1	0	3.538
Industrial Arts									
Latin									
Art									

TABLE XVI

Distributions of grades for class 5 for the year 1946-47. (Grade 8)

Subject	Number of Grades	Grade							Grade Point Average
		A	A-	B	B-	C	C-	F	
English	49	0	0	1	6	14	14	14	1.306
Mathematics	49	0	0	1	6	14	19	9	1.408
Science	49	0	0	1	20	9	17	2	2.020
Social Studies	49	0	2	4	14	13	12	4	2.163
Vocal Music	42	1	1	7	18	9	5	1	2.761
Instr. Music	6	0	1	3	1	1	0	0	3.666
Physical Ed.	46	5	5	11	16	6	3	0	3.521
Industrial Arts	49	2	2	8	13	13	7	4	2.571
Latin									
Art									

TABLE XVII

Distributions of grades for class 6 for the year 1946-47. (Grade 8)

Subject	Number of Grades	Grade							Grade Point Average
		A	A-	B	B-	C	C-	F	
English	8	0	0	0	0	1	2	5	0.500
Mathematics	8	0	0	0	0	0	5	3	0.625
Science	8	0	0	0	0	2	5	1	1.125
Social Studies	8	0	0	0	0	6	2	0	1.750
Vocal Music	6	0	0	1	1	2	2	0	2.166
Instr. Music	2	0	0	2	0	0	0	0	4.000
Physical Ed.	4	0	0	1	2	1	0	0	3.000
Industrial Arts	8	0	0	2	1	3	2	0	2.375
Latin									
Art									

TABLE XVIII

Distributions of grades for class 7 for the year 1946-47. (Grade 8)

Subject	Number of Grades	Grade								Grade Point Average
		A	A-	B	B-	C	C-	F		
English	26	0	0	0	2	7	5	12	0.961	
Mathematics	26	0	0	1	3	3	11	8	1.153	
Science	26	0	0	1	3	9	8	5	1.500	
Social Studies	26	0	0	0	4	6	8	8	1.230	
Vocal Music	26	0	1	3	9	13	0	0	2.692	
Instr. Music										
Physical Ed.	17	0	3	5	5	3	1	0	3.352	
Industrial Arts										
Latin										
Art										

TABLE XIX

Distributions of grades for class 8 for the year 1946-47. (Grade 8)

Subject	Number of Grades	Grade								Grade Point Average
		A	A-	B	B-	C	C-	F		
English	20	0	0	0	2	1	8	9	0.800	
Mathematics	20	0	0	0	4	2	5	9	1.050	
Science	20	0	0	2	2	5	3	8	1.350	
Social Studies	20	0	0	2	2	3	1	12	1.050	
Vocal Music	14	1	0	1	1	5	2	4	1.785	
Instr. Music	6	0	0	3	3	0	0	0	3.500	
Physical Ed.	14	4	2	0	4	2	1	1	3.642	
Industrial Arts	20	0	3	1	4	7	1	4	1.550	
Latin										
Art										

TABLE XX

Distribution of grades for the school year 1946-47. (Grade 8)

Subject	Number of Grades	Grade							
		A	A-	B	B-	C	C-	F	
English	234	10	15	26	44	51	39	49	
Mathematics	234	8	17	34	42	44	55	34	
Science	234	1	28	37	72	42	36	18	
Social Studies	234	7	18	37	53	51	38	30	
Vocal Music	195	7	14	38	73	42	16	5	
Instr. Music	38	2	5	23	6	2	0	0	
Physical Education	172	24	25	44	44	28	6	1	
Industrial Arts	232	15	40	59	43	45	19	11	
Latin									
Art									

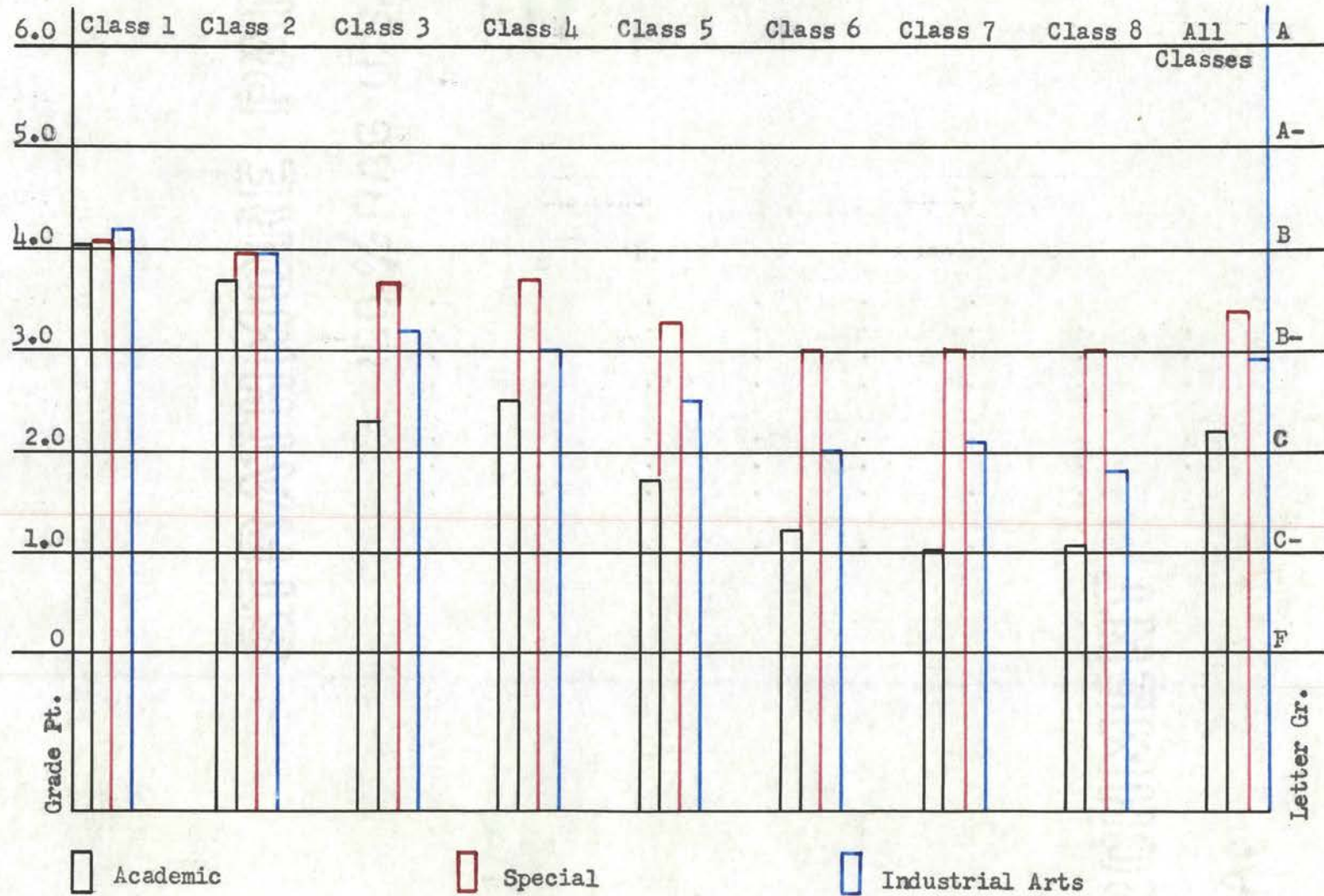
TABLE XXI

Comparison of grade point averages for the school year 1946-47 (Grade 8)

	Subject	Class							
		1	2	3	4	5	6	7	8
Academic Subjects	English	4.250	3.382	2.000	2.437	1.306	0.961	0.500	0.800
	Social Studies	3.777	3.941	2.285	2.093	2.163	1.230	1.750	1.050
	Mathematics	4.166	3.529	2.103	2.566	1.408	1.153	0.625	1.050
	Science	4.055	3.882	2.965	2.875	2.020	1.500	1.125	1.350
	Latin								
Special Subjects	Vocal Music	3.615	4.035	2.860	3.000	2.761	2.692	2.166	1.785
	Instrumental Music	4.600	4.000	4.166	2.500	3.666		4.000	3.350
	Physical Education	4.173	3.928	4.214	3.538	3.521	3.352	3.000	3.642
Art									
Industrial Education	Industrial Arts	4.583	4.264	3.758	3.500	2.571	1.884	2.375	1.550

Graph 3

Comparison of grade point averages in academic, special and industrial arts subjects for the school year 1946-47 (Grade 8)



Graph 4

Comparison of grade point averages and I. Q. averages for the school year 1946-47 (Grade 8)



Ninth Grade Comparisons. Tables XXII through XXIX show the distribution marks of the eight classes of the ninth grade. The tables take on a new meaning with the choice of elective subjects. The averages of classes 1 and 2 are predominantly high as has been shown in the other similar tables. About half of these classes took Latin and half industrial arts. Only one selected physical education. Classes 3 and 4 show about average grades with a little better than half of the students taking industrial arts with only a few taking Latin. Class 5 again drops to the point wherein the majority of the grades range from B- to C-. About three-fourths of this class selected industrial arts as an elective which was far more than those selecting any other subject. The grades of the four left in class six are shown still lower with the exception of industrial arts where they range from B- to A. All four students of this class selected industrial arts as an elective subject.

The grades of classes 7 and 8 for the most part range from B- down to F. Eight out of the nine students left in class 7 selected industrial arts, and three out of the five left in class 8 chose it as one of their subjects. Graph 5 shows more leveling off with special subjects still much higher than the industrial arts subjects, and the industrial arts subjects higher than the academic subjects. Class 5 shows the lowest grade point average of any of the classes and this is probably caused by the large number of students which have dropped from classes 6, 7, and 8. Special subjects in some cases have some very high averages, which is likely brought about by the few numbers of students selecting these subjects. The I. Q. and grade point comparison of Graph 6 shows the condition still existing in similar charts of other grades.

TABLE XXII

Distributions of grades for class 1 for the year 1947-48. (Grade 9)

Subject	Number of Grades	Grade							Grade Point Average
		A	A-	B	B-	C	C-	F	
English	34	2	15	7	7	2	0	1	4.117
Mathematics	34	3	9	8	5	6	2	1	3.647
Science									
Social Studies	34	1	6	13	8	5	0	1	3.294
Vocal Music	7	1	0	4	2	0	0	0	4.000
Instr, Music	4	1	1	2	0	0	0	0	4.750
Physical Ed.									
Industrial Arts	20	2	5	10	2	1	0	0	4.250
Latin	18	0	9	5	4	0	0	0	4.277
Art	6	0	0	5	1	0	0	0	4.250

TABLE XXIII

Distributions of grades for class 2 for the year 1947-48. (Grade 9)

Subject	Number of Grades	Grade							Grade Point Average
		A	A-	B	B-	C	C-	F	
English	34	3	5	10	9	6	0	1	3.617
Mathematics	34	0	4	10	8	5	2	5	2.823
Science	6	0	0	0	2	3	1	0	2.166
Social Studies	34	1	9	8	5	6	2	3	3.294
Vocal Music	9	0	2	5	2	0	0	0	4.000
Instr. Music									
Physical Ed.	2	0	0	0	2	0	0	0	3.000
Industrial Arts	18	2	5	6	4	1	0	0	4.111
Latin	20	0	3	4	6	7	0	0	3.150
Art									

TABLE XXIV

Distributions of grades for class 3 for the year 1947-48. (Grade 9)

Subject	Number of Grades	Grade								Grade Point Average
		A	A-	B	B-	C	C-	F		
English	28	0	2	6	9	9	2	0	2.892	
Mathematics	28	0	0	0	6	8	10	4	1.571	
Science	4	0	0	0	2	2	0	0	2.500	
Social Studies	28	1	1	6	9	8	2	1	2.857	
Vocal Music	4	2	1	1	0	0	0	0	5.250	
Instr. Music	2	0	0	1	1	0	0	0	3.500	
Physical Ed.	2	2	0	0	0	0	0	0	6.000	
Industrial Arts	16	1	5	2	4	4	0	0	3.687	
Latin	4	0	0	1	1	2	0	0	2.750	
Art	4	0	0	2	1	1	0	0	3.250	

TABLE XXV

Distributions of grades for class 4 for the year 1947-48. (Grade 9)

Subject	Number of Grades	Grade								Grade Point Average
		A	A-	B	B-	C	C-	F		
English	30	0	1	8	7	8	5	1	2.633	
Mathematics	30	0	1	1	1	9	11	7	1.366	
Science	6	0	0	0	4	2	0	0	2.666	
Social Studies	30	0	2	3	10	6	5	4	2.300	
Vocal Music	8	3	2	2	1	0	0	0	4.875	
Instr. Music										
Physical Ed.										
Industrial Arts	18	1	4	2	7	4	0	0	3.500	
Latin	4	0	0	1	0	1	2	0	2.000	
Art	4	0	0	1	2	1	0	0	3.000	

TABLE XXVI

Distributions of grades for class 5 for the year 1947-48. (Grade 9)

Subject	Number of Grades	Grade								Grade Point Average
		A	A-	B	B-	C	C-	F		
English	42	0	0	8	10	13	4	7	2.190	
Mathematics	42	0	0	1	7	13	13	8	1.523	
Science	5	0	0	0	0	0	3	2	0.600	
Social Studies	40	0	1	2	10	7	17	3	1.850	
Vocal Music	6	1	2	3	0	0	0	0	4.666	
Instr. Music	2	0	1	1	0	0	0	0	4.500	
Physical Ed.	8	2	0	5	1	0	0	0	4.375	
Industrial Arts	29	3	5	8	6	6	1	0	3.655	
Latin	2	0	0	0	0	0	2	0	1.000	
Art	6	0	0	1	1	2	0	2	1.833	

TABLE XXVII

Distributions of grades for class 6 for the year 1947-48. (Grade 9)

Subject	Number of Grades	Grade							Grade Point Average
		A	A-	B	B-	C	C-	F	
English	8	0	0	0	0	2	5	1	1.125
Mathematics	8	0	0	0	0	1	6	1	1.000
Science									
Social Studies	8	0	0	0	3	2	2	1	2.125
Vocal Music									
Instr. Music	2	0	1	1	0	0	0	0	4.500
Physical Ed.	2	2	0	0	0	0	0	0	6.000
Industrial Arts	8	2	2	0	3	1	0	0	4.125
Latin									
Art									

TABLE XXVIII

Distributions of grades for class 7 for the year 1947-48. (Grade 9)

Subject	Number of Grades	Grade								Grade Point Average
		A	A-	B	B-	C	C-	F		
English	18	0	0	3	3	5	3	4	1.888	
Mathematics	18	0	0	4	1	1	5	7	1.500	
Science	2	0	0	0	0	2	0	0	2.000	
Social Studies	16	0	1	1	2	5	3	4	1.750	
Vocal Music										
Instr. Music										
Physical Ed.	2	2	0	0	0	0	0	0	6.000	
Industrial Arts	16	4	4	2	2	0	3	1	3.812	
Latin										
Art	2	0	0	0	0	2	0	0	2.000	

TABLE XXIX

Distributions of grades for class 8 for the year 1947-48. (Grade 9)

Subject	Number of Grades	Grade								Grade Point Average
		A	A-	B	B-	C	C-	F		
English	10	0	0	1	2	6	1	0	2.300	
Mathematics	10	0	0	0	1	3	4	2	1.300	
Science										
Social Studies	10	0	0	0	5	3	2	0	2.300	
Vocal Music										
Instr. Music	4	0	3	1	0	0	0	0	4.750	
Physical Ed.	2	0	1	0	1	0	0	0	4.000	
Industrial Arts	6	0	1	3	2	0	0	0	3.833	
Latin										
Art	2	0	0	1	1	0	0	0	3.500	

TABLE XXX

Distribution of grades for the school year 1947-48. (Grade 9)

Subject	Number of Grades	Grade							
		A	A-	B	B-	C	C-	F	
English	204	5	23	43	47	51	20	15	
Mathematics	204	3	14	24	29	46	53	35	
Science	23	0	0	0	8	9	4	2	
Social Studies	200	3	20	33	52	33	42	17	
Vocal Music	34	7	7	15	5	0	0	0	
Instr. Music	14	7	6	0	1	0	0	0	
Physical Education	18	8	1	5	4	0	0	0	
Industrial Arts	131	15	31	33	30	17	4	1	
Latin	48	0	12	11	11	10	4	0	
Art	24	0	0	10	6	6	0	2	

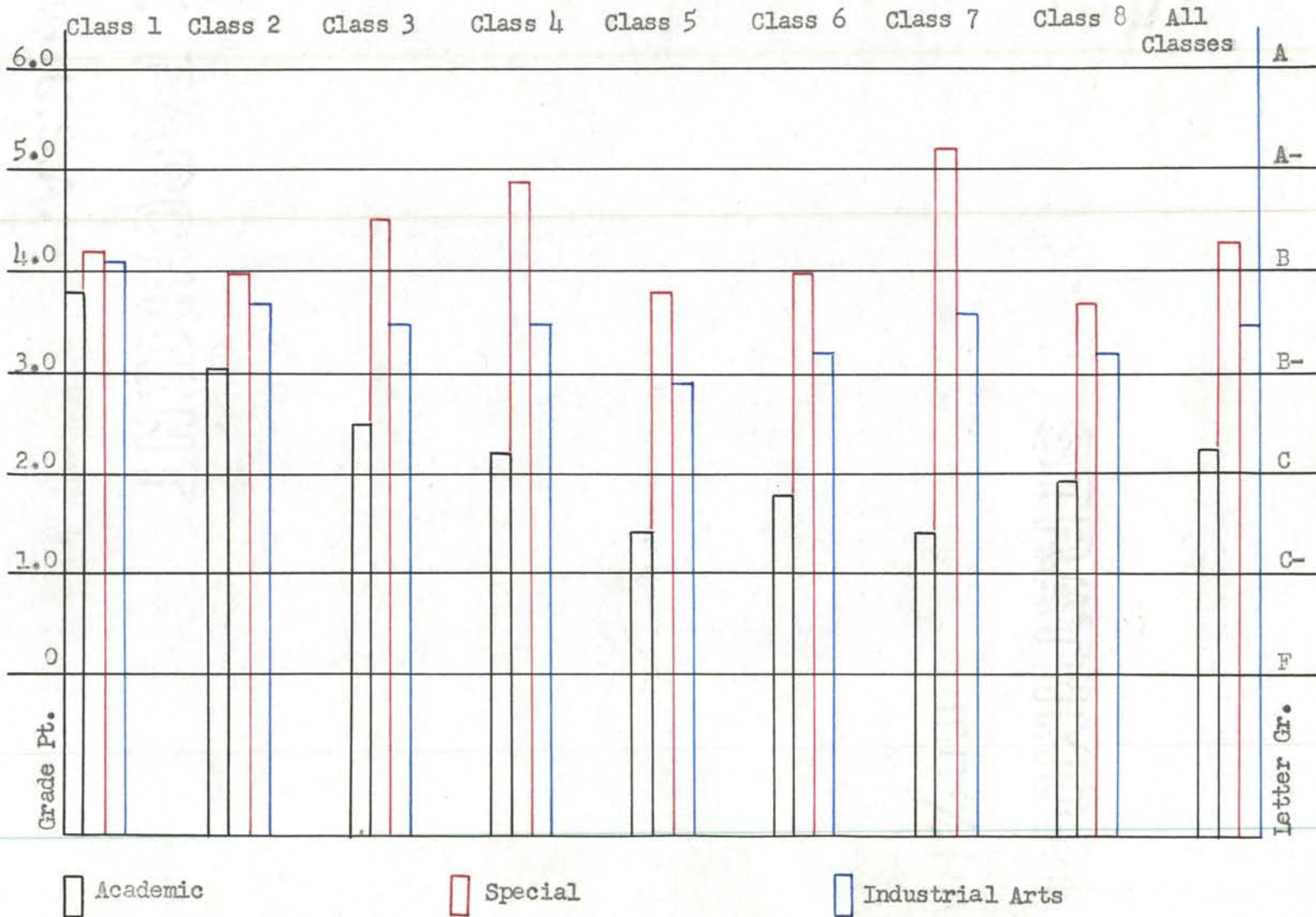
TABLE XXXI

Comparison of grade point averages for the school year 1947-48 (Grade 9)

	Subject	Class							
		1	2	3	4	5	6	7	8
Academic Subjects	English	4.117	3.617	2.892	2.633	2.190	1.888	1.125	2.300
	Social Studies	3.294	3.294	2.857	2.300	1.850	1.750	2.125	2.300
	Mathematics	3.647	2.823	1.571	1.366	1.523	1.500	1.000	1.300
	Science		2.166	2.500	2.666	0.600	2.000		
	Latin	4.277	3.150	2.750	2.000	1.000			
Special Subjects	Vocal Music	4.000	4.000	5.250	4.875	4.666			
	Instrumental Music	4.750		3.500		4.500		4.500	
	Physical Education			6.000		4.375	6.000	6.000	4.000
	Art	3.833		3.250		1.833	2.000		3.500
Industrial Education	Industrial Arts	4.250	4.111	3.687	3.500	3.655	4.125	4.125	3.833

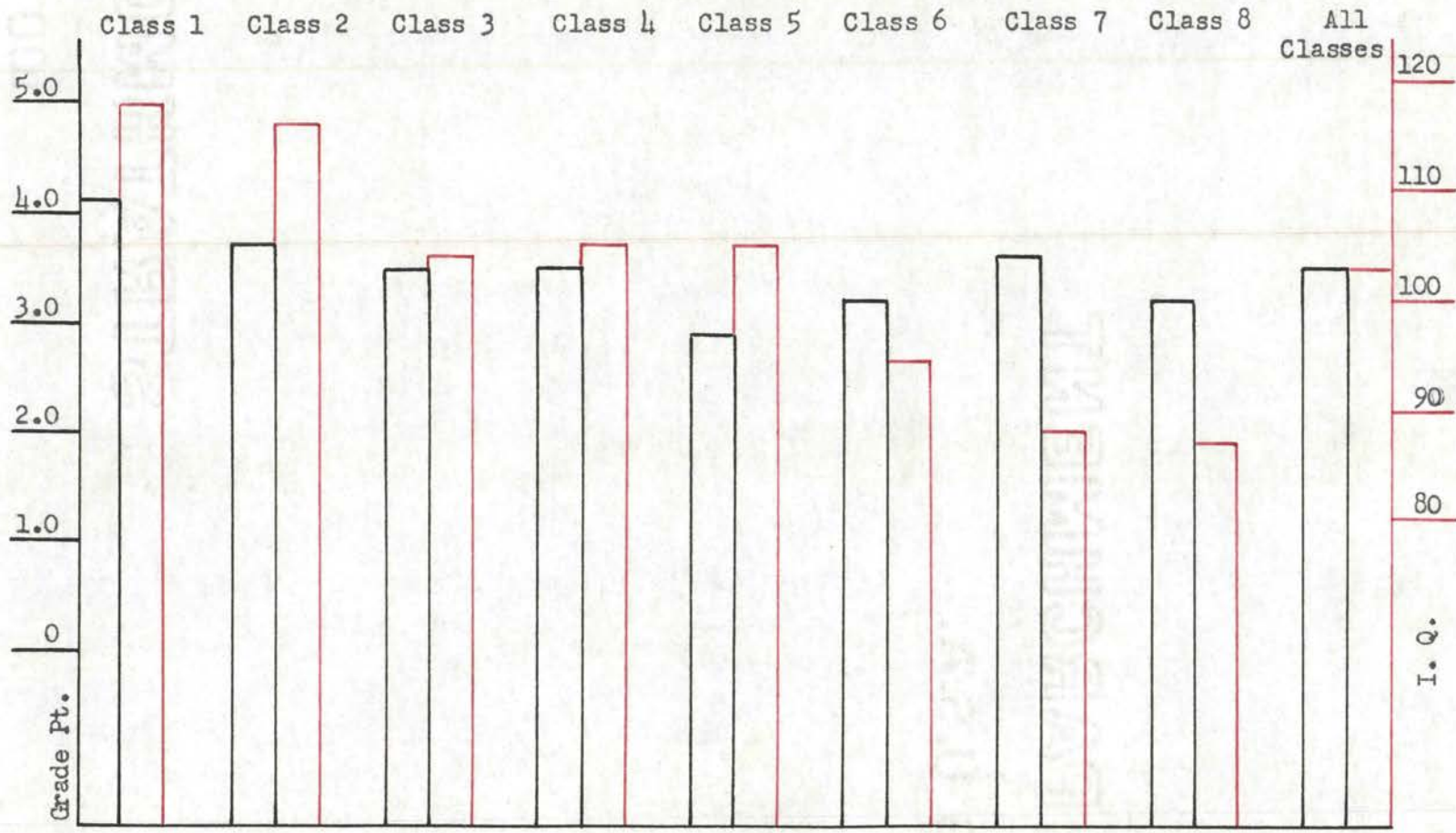
Graph 5

Comparison of grade point averages in academic, special and industrial arts subjects for the school year 1947-48 (Grade 9)



Graph 6

Comparison of grade point averages and I. Q. averages for the school year 1947-48 (Grade 9)



Comparison of Achievement in Tenth Grade. It must be remembered when interpreting the charts of senior high that a different grading system was used. The system used for figuring grade point averages is as follows: H, 3; S¹, 2.5; S², 2; S³, 1; S⁴, 0; and U, -1. Using this system will show grade point averages occasionally as 0.000. This does not mean that no average is shown but means that it is an average of S⁴.

Charts XXXII through XXXIX show the distribution of the group by classes. These tables show that classes 1 and 2 still are high, most of the grades above an S³ and that the subjects selected are those satisfying the requirements of the college preparatory curricula. Only two students out of 36 in these two classes were enrolled in industrial arts. Classes 3 and 4 have a lower average as they have had for all grades studied, ranging for the most part from S¹ to S⁴, but listing only three failing grades between them. About one-third of the students selected industrial arts as one of their electives. The grades of classes 5 and 6 for the most part fall between S² and S⁴ and only three failing grades were made. Seven students of these two classes enrolled in industrial arts. Class 7 in the tenth grade had dropped to 8 students and class 8 to four students. The grades of these two classes fall on the lower part of the grading scale. Of this group of 12 pupils, 9 enrolled in industrial arts. When checking Table XL, which shows the total distribution of grades, it can be seen that practically all grades shown are passing grades. A little over one-third of all classes were enrolled in industrial education subjects. Industrial education subjects in the high school include; industrial arts, trade and industrial, diversified occupations, and vocational agriculture, while in the junior high, it included only industrial arts. Vocational agriculture is offered in the

junior high as a ninth grade elective, but only two students from this group enrolled in it, so it was not considered worthwhile to include it in the averages. Table XLI shows the grade point averages of all the classes in each subject of the tenth grade, and Graph 7 gives a comparison of grade point averages of special, academic, and industrial education subjects. The special subjects are still higher than both academic and industrial education subjects with the exception shown in classes 7 and 8 where industrial arts is higher than the special subjects.

Graph 8 is a comparison of I. Q. and grade point averages. This table shows that the classes with the higher I. Q.'s are still not working as close to the peak of their performance compared to their I. Q.'s as those with the lower I. Q.'s.

TABLE XXXII

Distribution of grades for class 1 for the year 1948-49. (Grade 10)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	34	2	12	12	8	0	0	2.000
Social Studies	30	10	10	6	4	0	0	2.367
Mathematics	27	2	6	7	8	4	0	1.592
Science	17	1	6	7	2	1	0	2.000
Foreign Language	21	0	2	8	9	2	0	1.428
Commercial	2	0	0	2	0	0	0	2.000
Vocal Music	4	2	2	0	0	0	0	2.750
Instr. Music	5	5	0	0	0	0	0	3.000
Physical Ed.	25	1	22	2	0	0	0	2.480
Art	1	1	0	0	0	0	0	3.000
Driver Education								
Industrial Arts	2	0	0	1	1	0	0	1.500
Trade & Industrial Diversified Occupations Vocational Agriculture								

TABLE XXXIII

Distribution of grades for class 2 for the year 1948-49. (Grade 10)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	30	2	13	10	3	2	0	2.050
Social Studies	18	8	0	6	4	0	0	2.222
Mathematics	24	5	6	5	5	3	0	1.875
Science	18	2	7	4	3	2	0	1.916
Foreign Language	24	0	3	2	14	5	0	1.062
Commercial	2	0	0	0	1	1	0	0.500
Vocal Music	4	1	3	0	0	0	0	2.625
Instr. Music								
Physical Ed.	18	1	15	0	0	0	2	2.138
Art								
Driver Education								
Industrial Arts	3	0	0	3	0	0	0	2.000
Trade & Industrial Diversified Occupations Vocational Agriculture								

TABLE XXXIV

Distribution of grades for class 3 for the year 1948-49. (Grade 10)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	27	0	1	5	15	6	0	1.018
Social Studies	19	0	0	6	9	4	0	1.105
Mathematics	16	0	0	1	10	5	0	0.750
Science	16	0	2	1	8	5	0	0.937
Foreign Language	14	0	0	2	2	9	1	0.357
Commercial								
Vocal Music	6	3	3	0	0	0	0	2.750
Instr. Music	5	3	2	0	0	0	0	2.800
Physical Ed.	16	1	15	0	0	0	0	2.531
Art								
Driver Education	1	0	1	0	0	0	0	2.500
Industrial Arts	10	0	6	2	2	0	0	2.100
Trade & Industrial Diversified Occupations Vocational								
Agriculture	4	3	0	1	0	0	0	2.750

TABLE XXXV

Distribution of grades for class 4 for the year 1948-49. (Grade 10)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	21	0	2	6	9	4	0	1.238
Social Studies	16	0	2	5	7	1	1	1.312
Mathematics	7	0	0	1	1	5	0	0.428
Science	19	2	2	4	2	8	1	1.052
Foreign Language	5	1	1	0	1	2	0	1.300
Commercial	2	0	2	0	0	0	0	2.500
Vocal Music	1	1	0	0	0	0	0	3.000
Instr. Music								
Physical Ed.	16	0	14	2	0	0	0	2.437
Art								
Driver Education	1	0	1	0	0	0	0	2.500
Industrial Arts	8	1	2	5	0	0	0	2.250
Trade & Industrial Diversified Occupations Vocational Agriculture								

TABLE XXXVI

Distribution of grades for class 5 for the year 1948-49. (Grade 10)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	33	0	1	6	11	14	1	0.742
Social Studies	24	0	1	4	12	7	0	0.937
Mathematics	15	0	1	0	7	7	0	0.633
Science	30	1	3	3	13	10	0	0.983
Foreign Language	10	0	0	0	2	6	2	0.000
Commercial								
Vocal Music	6	0	6	0	0	0	0	2.500
Instr. Music	4	4	0	0	0	0	0	3.000
Physical Ed.	24	3	21	0	0	0	0	2.562
Art								
Driver Education	1	0	0	1	0	0	0	2.000
Industrial Arts	14	0	1	7	6	0	0	1.607
Trade & Industrial Diversified Occupations Vocational								
Agriculture	2	0	1	0	0	1	0	1.250

TABLE XXXVII

Distribution of grades for class 6 for the year 1948-49. (Grade 10)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	6	0	0	0	4	2	0	0.666
Social Studies	4	0	0	0	4	0	0	1.000
Mathematics	2	0	0	0	0	2	0	0.000
Science	6	0	1	0	5	0	0	1.250
Foreign Language								
Commercial								
Vocal Music								
Instr. Music	2	2	0	0	0	0	0	3.000
Physical Education	5	0	5	0	0	0	0	2.500
Art								
Driver Education								
Industrial Arts								
Trade & Industrial								
Diversified								
Occupations								
Vocational								
Agriculture	2	0	1	1	0	0	0	2.250

TABLE XXXVIII

Distribution of grades for class 7 for the year 1948-49. (Grade 10)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	16	0	1	0	6	9	0	0.531
Social Studies	16	0	0	2	4	10	0	0.500
Mathematics	6	0	0	1	3	1	1	0.666
Science	12	0	0	3	4	5	0	0.833
Foreign Language	1	0	0	0	0	1	0	0.000
Commercial	2	0	0	0	2	0	0	1.000
Vocal Music								
Instr. Music								
Physical Ed.	8	0	7	0	1	0	0	2.312
Art	2	0	2	0	0	0	0	2.500
Driver Education	1	0	0	0	1	0	0	1.000
Industrial Arts	12	0	2	4	3	1	2	1.166
Trade & Industrial Diversified Occupations Vocational Agriculture	2	0	2	0	0	0	0	2.500

TABLE XXXIX

Distribution of grades for class 8 for the year 1948-49. (Grade 10)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	8	0	0	2	1	4	1	0.000
Social Studies	6	0	0	0	5	1	0	0.833
Mathematics	2	0	0	0	0	2	0	0.000
Science	10	0	1	0	4	5	0	0.650
Foreign Language								
Commercial								
Vocal Music								
Instr. Music	2	2	0	0	0	0	0	3.000
Physical Ed.	3	0	3	0	0	0	0	2.500
Art								
Driver Education	2	0	0	2	0	0	0	2.000
Industrial Arts	6	1	2	2	1	0	0	2.166
Trade & Industrial								
Diversified								
Occupations								
Vocational								
Agriculture								

TABLE XL

Distribution of grades for the school year 1948-49. (Grade 10)

Subject	Number of Grades	Grade					
		H	S ¹	S ²	S ³	S ⁴	U
English	175	4	30	41	52	46	2
Social Studies	133	18	13	29	49	23	1
Mathematics	99	7	13	15	34	29	1
Science	128	6	22	22	41	36	1
Foreign Language	75	1	6	12	28	25	3
Commercial	8	0	2	2	3	1	0
Vocal Music	21	7	14	0	0	0	0
Instrumental Music	18	16	2	0	0	0	0
Physical Education	115	6	102	4	1	0	2
Art	3	1	2	0	0	0	0
Driver Education	6	0	2	3	1	0	0
Industrial Arts	62	2	13	25	16	3	3
Trade & Industrial Diversified Occupations Vocational Agriculture	10	3	4	2	0	1	0

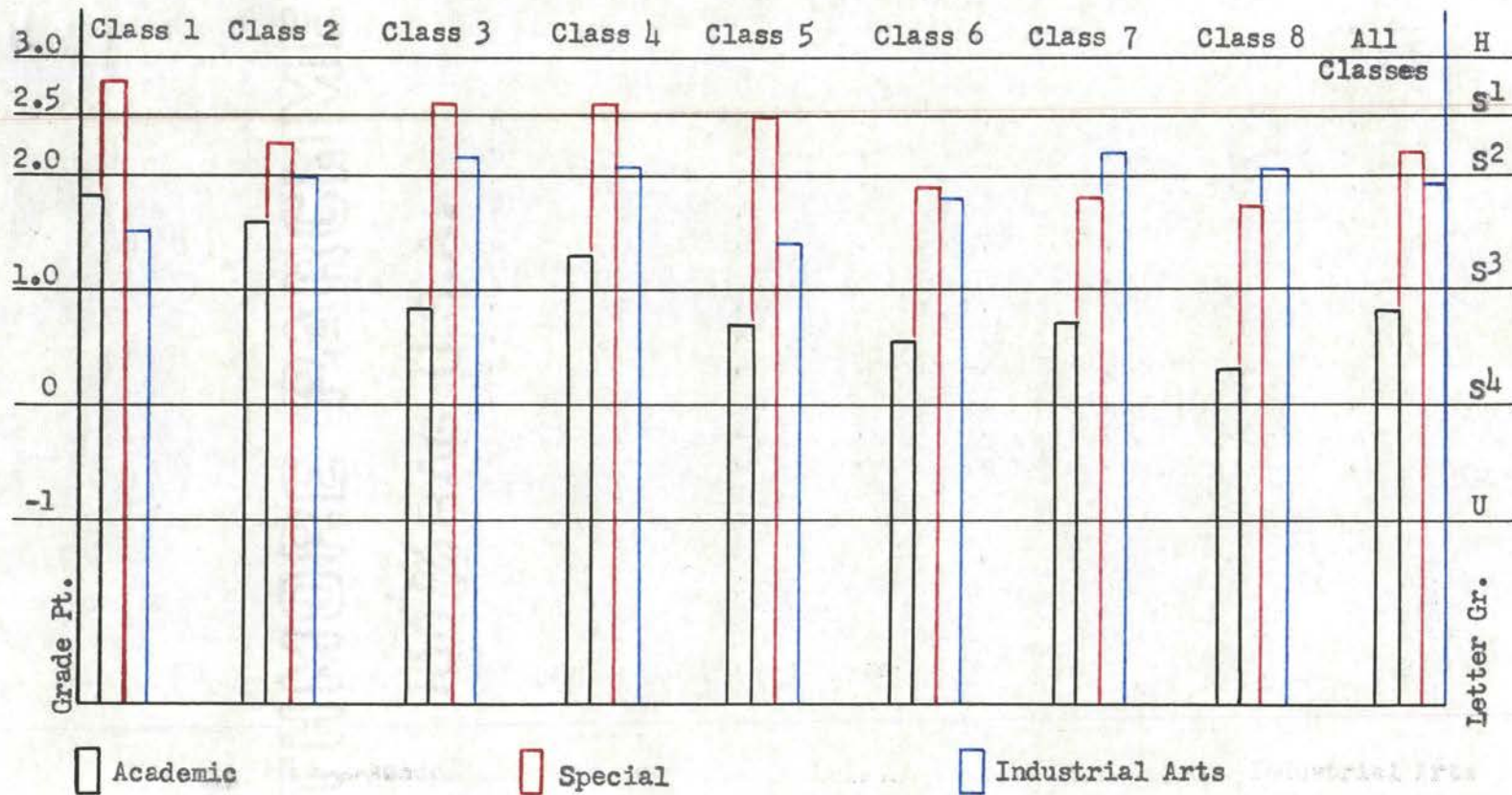
TABLE XLI

Comparison of grade point averages for the school year 1948-49 (Grade 10)

	Subject	Class							
		1	2	3	4	5	6	7	8
Academic Subjects	English	2.000	2.050	1.018	1.238	0.742	0.531	0.666	0.000
	Social Studies	2.367	2.222	1.105	1.312	0.937	0.500	1.000	0.833
	Mathematics	1.592	1.875	0.750	0.428	0.633	0.666	0.000	0.000
	Science	2.000	1.916	0.937	1.052	0.983	0.833	1.250	0.650
	Foreign Language	1.428	1.062	0.357	1.300	0.000	0.000		
	Commercial	2.000	0.500		2.500		1.000		
Special Subjects	Vocal Music	2.750	2.625	2.750	3.000	2.500			
	Instrumental Music	3.000		2.800		3.000		3.000	3.000
	Physical Education	2.480	2.138	2.531	2.437	2.562	2.312	2.500	2.500
	Art	3.000					2.500		0.000
	Driver Education			2.500	2.500	2.000	1.000	0.000	2.000
Industrial Education	Industrial Arts	1.500	2.000	2.000	2.250	1.607	1.166		2.166
	Trade & Industrial Diversified Occupations								
	Vocational Agriculture			2.750		1.250	2.500	2.250	

Graph 7

Comparison of grade point averages in academic, special and industrial arts subjects for the school year 1948-49 (Grade 10)



Graph 8

Comparison of grade point averages and I. Q. averages for the school year 1948-49 (Grade 10)



Comparison of Grade Eleven. Tables XLII through XLIX show the distribution of grades by classes. Classes 1 and 2 are still high, 3 and 4 slightly lower, with 5, 6, 7, and 8 showing about the same comparison as in the other grades, with the exception of unsatisfactory grades which are much fewer in number. Table L shows the total distribution of grades for the eleventh grade. About one-fourth of all the students were enrolled in industrial arts, and about one-third were enrolled in industrial education of some type. A comparison of grade point averages is shown in Table LI. This table shows as does the others, a tendency for the grade point averages to drop from class 1 to 8.

Graph 9 shows the comparison of academic, special and industrial education subjects. Again, in all but one class, special subjects have the highest averages. Class 3 has a higher industrial education average than special average. Industrial education grade point averages are higher than academic grade point averages and tend to run higher in proportion in the lower ranked achievement classes. The I. Q. and grade point comparison graph shows that the same condition still exists between those with lower I. Q.'s doing better work compared to their I. Q.'s than are those with the higher I. Q.'s.

TABLE XLII

Distribution of grades for class 1 for the year 1949-50. (Grade 11)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	37	1	15	16	4	1	0	2.067
Social Studies	30	2	15	11	1	1	0	2.216
Mathematics	24	2	9	4	7	2	0	1.812
Science	21	4	4	8	4	1	0	2.000
Foreign Language	6	0	0	0	4	2	0	0.666
Commercial	2	0	0	0	1	1	0	0.500
Vocal Music	7	6	1	0	0	0	0	2.928
Instr. Music	4	4	0	0	0	0	0	3.000
Physical Ed.	4	0	4	0	0	0	0	2.500
Art	4	2	2	0	0	0	0	2.250
Driver Education	4	0	2	2	0	0	0	2.250
Industrial Arts	14	1	4	4	4	1	0	0.500
Trade & Industrial Diversified Occupations Vocational Agriculture								

TABLE XLIII

Distribution of grades for class 2 for the year 1949-50. (Grade 11)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	29	5	9	7	6	2	0	1.982
Social Studies	27	7	10	5	4	1	0	2.222
Mathematics	23	3	6	6	4	4	0	1.739
Science	23	1	7	8	4	3	0	1.760
Foreign Language	6	0	0	2	0	4	0	0.666
Commercial	2	0	0	0	1	1	0	0.500
Vocal Music	3	2	1	0	0	0	0	2.833
Instr. Music								
Physical Ed.	5	1	4	0	0	0	0	2.600
Art								
Driver Education	2	0	1	0	0	1	0	1.250
Industrial Arts	6	1	3	1	1	0	0	2.250
Trade & Industrial	2	0	1	1	0	0	0	2.250
Diversified Occupations Vocational Agriculture								

TABLE XLIV

Distribution of grades for class 3 for the year 1949-50. (Grade 11)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	26	0	1	5	12	7	1	0.942
Social Studies	22	0	3	7	8	4	0	1.340
Mathematics	17	0	1	5	7	4	0	1.147
Science	9	0	1	5	1	2	0	1.500
Foreign Language	8	0	2	1	2	3	0	1.125
Commercial	2	0	1	1	0	0	0	2.250
Vocal Music	6	4	2	0	0	0	0	2.833
Instr. Music	4	4	0	0	0	0	0	3.000
Physical Ed.								
Art								
Driver Education	2	0	1	1	0	0	0	2.250
Industrial Arts	2	0	0	2	0	0	0	2.000
Trade & Industrial	4	0	4	0	0	0	0	2.500
Diversified								
Occupations	6	0	1	1	4	0	0	1.416
Vocational								
Agriculture	4	0	1	1	2	0	0	2.625

TABLE XLV

Distribution of grades for class 4 for the year 1949-50. (Grade 11)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	17	0	3	6	3	4	1	1.323
Social Studies	21	0	4	2	7	8	0	1.000
Mathematics	9	0	1	3	3	2	0	1.277
Science	6	0	0	0	1	5	0	0.166
Foreign Language	1	0	0	0	0	1	0	0.000
Commercial	4	0	1	1	1	1	0	1.375
Vocal Music	3	3	0	0	0	0	0	3.000
Instr. Music								
Physical Ed.	4	1	3	0	0	0	0	2.625
Art								
Driver Education	1	0	0	0	0	0	1	-1.000
Industrial Arts	7	2	2	3	0	0	0	2.428
Trade & Industrial	4	0	3	0	1	0	0	2.125
Diversified Occupations	6	0	2	4	0	0	0	2.166
Vocational Agriculture								

TABLE XLVI

Distribution of grades for class 5 for the year 1949-50. (Grade 11)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	34	0	0	4	18	11	1	0.735
Social Studies	31	1	1	5	11	12	1	1.777
Mathematics	15	0	1	2	7	3	2	0.766
Science	10	0	0	1	4	5	0	0.600
Foreign Language	8	0	1	1	1	5	0	0.687
Commercial	4	0	0	2	1	1	0	1.250
Vocal Music	6	0	6	0	0	0	0	2.500
Instr. Music	4	4	0	0	0	0	0	3.000
Physical Ed.	5	0	4	0	1	0	0	2.200
Art								
Driver Education	1	0	0	1	0	0	0	2.000
Industrial Arts	2	0	0	2	0	0	0	2.000
Trade & Industrial	10	1	6	2	1	0	0	2.300
Diversified								
Occupations	5	0	0	0	3	2	0	0.600
Vocational								
Agriculture								

TABLE XLVII

Distribution of grades for class 6 for the year 1949-50. (Grade 11)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	6	0	0	0	3	3	0	0.500
Social Studies	5	0	0	0	1	4	0	0.200
Mathematics	4	0	0	2	0	2	0	1.000
Science								
Foreign Language								
Commercial	2	0	0	0	2	0	0	1.000
Vocal Music								
Instr. Music	2	2	0	0	0	0	0	3.000
Physical Ed.	2	0	2	0	0	0	0	2.500
Art								
Driver Education								
Industrial Arts	4	0	0	2	0	2	0	1.000
Trade & Industrial Diversified Occupations								
Vocational Agriculture	2	0	2	0	0	0	0	2.500

TABLE XLVIII

Distribution of grades for class 7 for the year 1949-50. (Grade 11)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	11	0	0	2	5	4	0	0.818
Social Studies	10	0	2	1	5	1	1	1.100
Mathematics	4	0	0	0	2	2	0	0.500
Science	1	0	0	0	1	0	0	1.000
Foreign Language								
Commercial								
Vocal Music								
Instr. Music								
Physical Ed.	1	0	1	0	0	0	0	2.500
Art								
Driver Education	3	1	0	1	1	0	0	2.000
Industrial Arts	2	0	2	0	0	0	0	2.500
Trade & Industrial	3	0	2	0	1	0	0	2.000
Diversified								
Occupations	5	0	0	2	2	1	0	1.200
Vocational								
Agriculture	1	0	0	1	0	0	0	2.000

TABLE XLIX

Distribution of grades for class 8 for the year 1949-50. (Grade 11)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	6	0	0	1	3	1	1	0.666
Social Studies	7	0	0	1	3	3	0	0.714
Mathematics	5	0	0	1	0	4	0	0.400
Science	3	1	0	0	0	2	0	1.000
Foreign Language								
Commercial								
Vocal Music								
Instr. Music	2	2	0	0	0	0	0	3.000
Physical Ed.								
Art								
Driver Education	2	0	0	2	0	0	0	2.000
Industrial Arts								
Trade & Industrial	2	0	1	0	1	0	0	1.750
Diversified								
Occupations								
Vocational								
Agriculture	2	2	0	0	0	0	0	3.000

TABLE L

Distribution of grades for the school year 1949-50. (Grade 11)

Subject	Number of Grades	Grade					
		H	S ¹	S ²	S ³	S ⁴	U
English	166	6	28	41	54	33	4
Social Studies	153	10	35	32	40	34	2
Mathematics	101	5	18	23	30	23	2
Science	73	6	12	22	15	18	0
Foreign Language	29	0	3	4	7	15	0
Commercial	16	0	1	5	7	3	0
Vocal Music	25	15	10	0	0	0	0
Instr. Music	16	16	0	0	0	0	0
Physical Ed.	21	2	18	0	1	0	0
Art	4	2	2	0	0	0	0
Driver Education	16	1	4	8	1	1	1
Industrial Arts	37	4	11	14	5	3	0
Trade & Industrial	25	1	17	5	4	0	0
Diversified							
Occupations	22	0	3	7	9	3	0
Vocational							
Agriculture	9	2	3	2	2	0	0

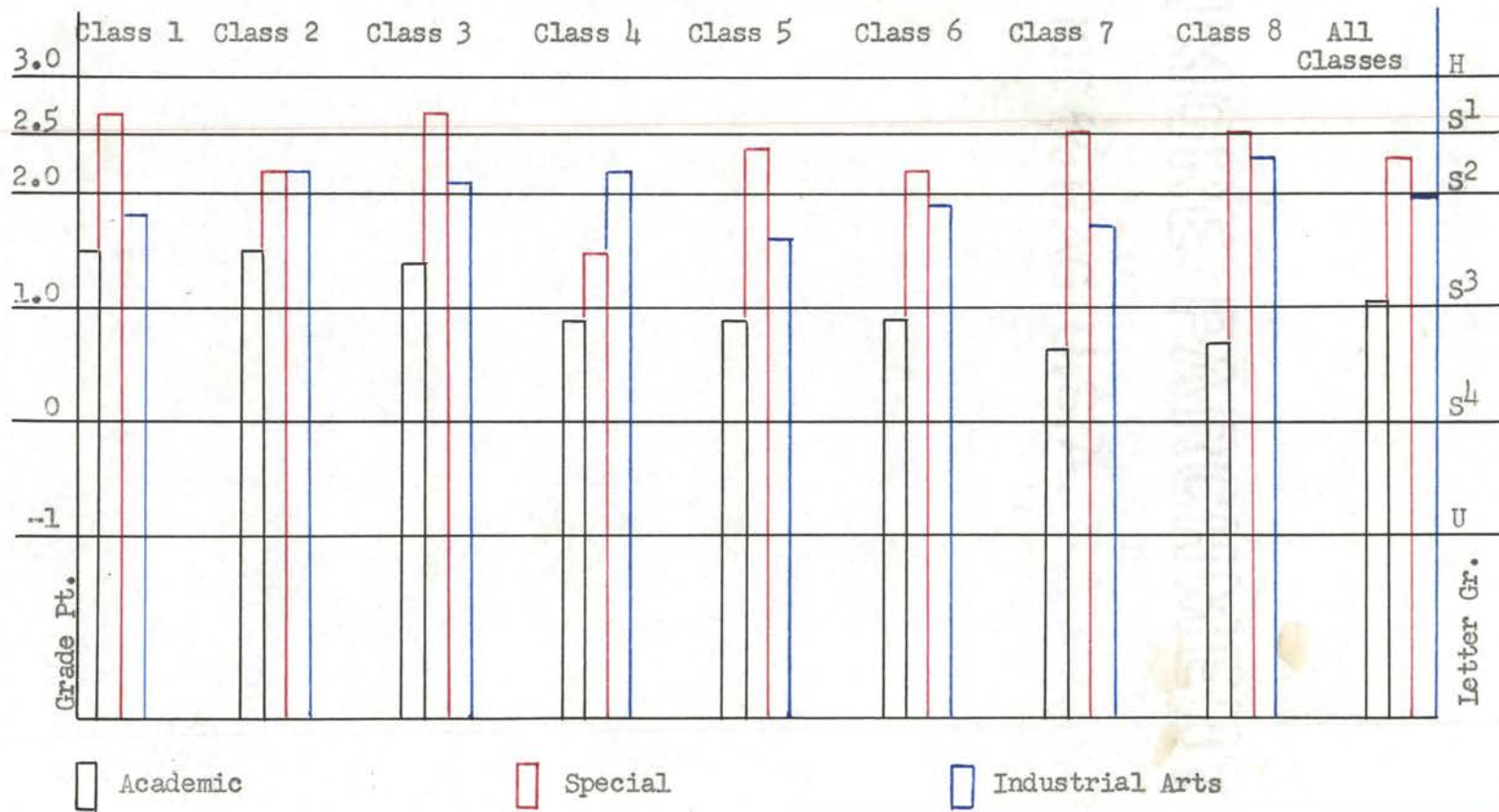
TABLE LI

Comparison of grade point averages for the school year 1949-50 (Grade 11)

Subject	Class								
	1	2	3	4	5	6	7	8	
Academic Subjects	English	2.076	1.982	0.942	1.323	0.735	0.818	0.500	0.666
	Social Studies	2.216	2.222	1.340	1.000	1.177	1.100	0.200	0.714
	Mathematics	1.812	1.739	1.147	1.277	0.766	0.500	1.000	0.400
	Science	2.000	1.760	1.500	0.166	0.600	1.000		1.000
	Foreign Language	0.666	0.666	1.125	0.000	0.687			
	Commercial	0.500	0.500	2.250	1.375	1.250		1.000	
Special Subjects	Vocal Music	2.928	2.833	2.833	3.000	2.500			
	Instrumental Music	3.000		3.000		3.000		3.000	3.000
	Physical Education	2.500	2.600		2.625	2.200	2.500	2.500	
	Art	2.750							
	Drivers Education	2.250	1.250	2.250	-1.000	2.000	2.000	2.000	2.000
Industrial Education	Industrial Arts	1.785	2.250	2.000	2.428	2.000	2.500		
	Trade & Industrial		2.250	2.500	2.125	2.300	2.000		1.750
	Diversified Occupations			1.416	2.166	0.600	1.200		
	Vocational Agriculture			2.625			2.000		3.000

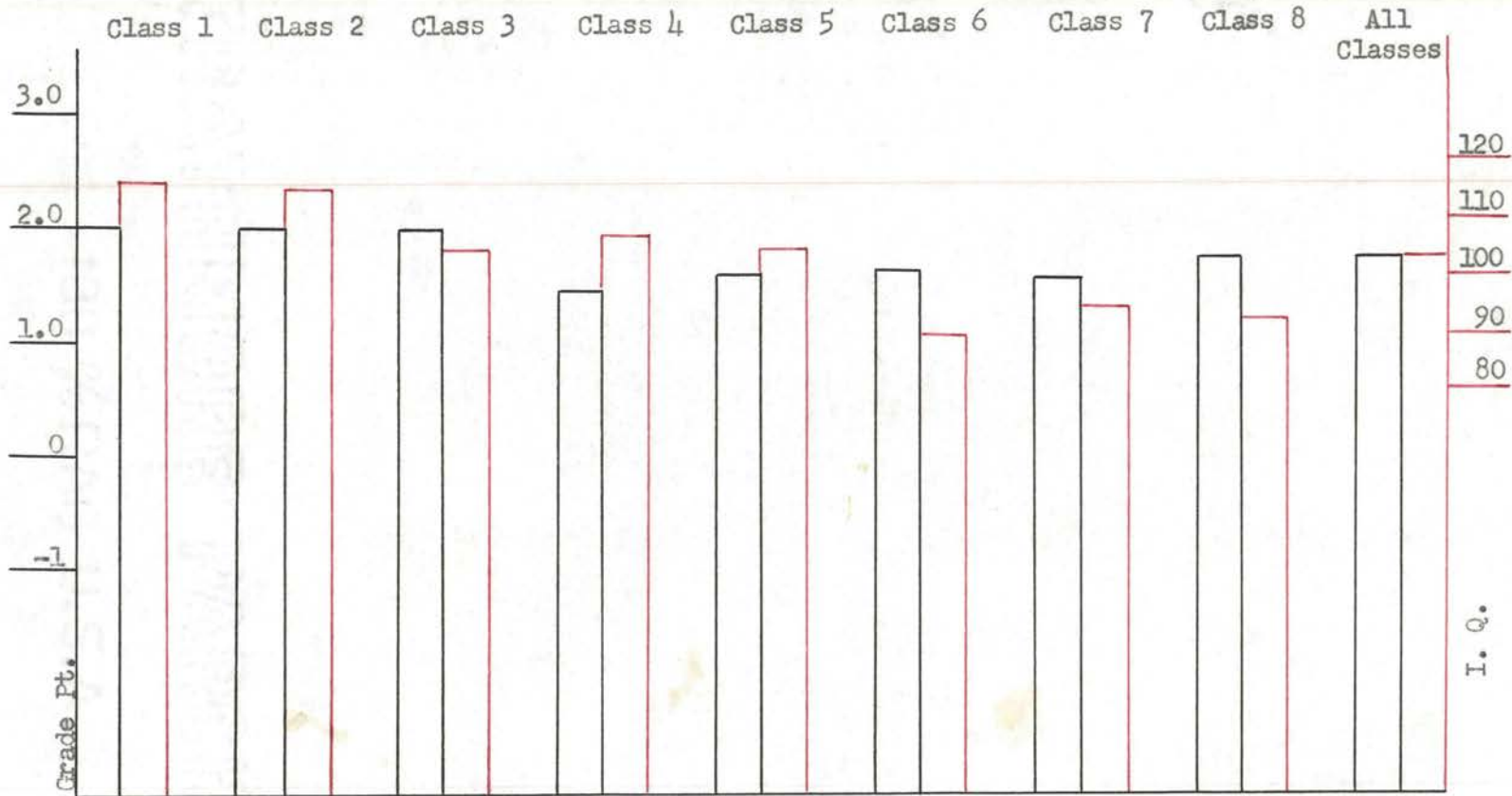
Graph 9

Comparison of grade point averages in academic, special and industrial arts subjects for the school year 1949-50 (Grade 11)



Graph 10

Comparison of grade point averages and I.Q. averages for the school year 1949-50 (Grade 11)



Comparisons in Grade Twelve. Tables LII through LIX show the grade distribution by classes for grade twelve. Classes 1 and 2 still retain their high marks and are still following the college preparatory curricula in general. Classes 3 and 4 are still high in grade point averages, but lower than class 1 and 2. There seems to be a greater tendency for choosing industrial education courses by the students in this grade, as about half of them were enrolled in a subject classified under this heading.

Class 5 for the most part still maintains passing marks and is grouped about the middle of the grading scale. Class 6 in this senior year of school has only two students left on the roll, class 7 only 4, and class 8 only 6. The three classes combined had only a total of twelve students. Distribution grades for these classes show that most of them were enrolled in English, mathematics, and industrial education. The total distribution for the senior year is shown in Table LX.

The grade point averages for all classes are shown in Table LXI which indicate the higher ranked classes still maintain higher grade point averages than the lower ranked classes. Graph 11 shows the averages of academic, special, and industrial education grades. The academic averages are still lower than both industrial education and special averages. Industrial arts averages in all but two classes are lower than the special averages.

Graph 12 showing the comparison of I. Q. and achievement averages show the condition still exists that has been pronounced throughout all the graphs showing a comparison of this kind. The classes with the higher I. Q.'s are not working as near to the peak of performance, compared to their average I. Q.'s, as are those with the lower I. Q.'s.

TABLE LII

Distribution of grades for class 1 for the year 1950-51. (Grade 12)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	37	7	15	8	7	0	0	2.202
Social Studies	19	0	7	5	4	3	0	1.657
Mathematics	16	4	6	2	2	2	0	2.062
Science	22	0	3	6	9	4	0	1.295
Foreign Language								
Commercial	10	0	0	5	4	1	0	1.400
Vocal Music	5	5	0	0	0	0	0	3.000
Instr. Music	4	4	0	0	0	0	0	3.000
Physical Ed.	3	1	2	0	0	0	0	2.666
Art	3	2	0	0	1	0	0	2.333
Driver Education	2	0	0	1	1	0	0	1.500
Industrial Arts	2	0	2	0	0	0	0	2.500
Trade & Industrial	4	0	0	4	0	0	0	2.000
Diversified Occupations Vocational Agriculture								

TABLE LIII

Distribution of grades for class 2 for the year 1950-51. (Grade 12)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	29	0	11	14	4	0	0	2.051
Social Studies	20	1	10	5	2	2	0	2.000
Mathematics	16	3	5	1	5	2	0	1.781
Science	20	0	5	5	4	6	0	1.325
Foreign Language								
Commercial	10	0	2	7	1	0	0	2.000
Vocal Music	6	5	1	0	0	0	0	2.916
Instr. Music								
Physical Ed.	5	2	3	0	0	0	0	2.700
Art								
Driver Education	1	0	0	1	0	0	0	2.000
Industrial Arts	4	0	2	1	1	0	0	2.000
Trade & Industrial	2	0	2	0	0	0	0	2.500
Diversified Occupations Vocational Agriculture								

TABLE LIV

Distribution of grades for class 3 for the year 1950-51. (Grade 12)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	30	2	6	9	8	5	0	1.566
Social Studies	16	0	2	2	6	6	0	0.937
Mathematics	8	0	1	1	3	3	0	0.937
Science	10	2	0	3	2	3	0	1.400
Foreign Language	2	0	0	0	0	2	0	0.000
Commercial	8	0	0	3	4	1	0	1.250
Vocal Music	10	8	0	1	1	0	0	2.700
Instr. Music	2	2	0	0	0	0	0	3.000
Physical Ed.	3	0	3	0	0	0	0	2.500
Art	2	2	0	0	0	0	0	3.000
Driver Education	1	0	0	1	0	0	0	2.000
Industrial Arts	8	1	2	3	1	1	0	1.875
Trade & Industrial	12	0	3	8	1	0	0	2.041
Diversified Occupations Vocational Agriculture	4	0	1	1	1	1	0	1.375

TABLE LV

Distribution of grades for class 4 for the year 1950-51. (Grade 12)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	20	0	3	10	4	2	1	1.525
Social Studies	13	0	0	1	7	5	0	0.692
Mathematics	4	0	2	0	2	0	0	1.750
Science	4	0	0	0	0	3	1	-0.250
Foreign Language								
Commercial	10	0	4	0	5	1	0	1.500
Vocal Music	6	4	0	0	2	0	0	2.333
Instr. Music								
Physical Education	3	0	3	0	0	0	0	2.500
Art								
Driver Education	2	0	1	0	1	0	0	1.750
Industrial Arts	5	2	0	2	1	0	0	2.200
Trade & Industrial	6	0	4	0	2	0	0	2.000
Diversified Occupations								
Vocational Agriculture	2	0	0	1	1	0	0	1.500

TABLE LVI

Distribution of grades for class 5 for the year 1950-51. (Grade 12)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	24	0	4	8	3	7	2	1.125
Social Studies	14	0	3	4	3	3	1	1.250
Mathematics	8	0	1	3	3	1	0	1.437
Science	11	0	1	1	6	1	2	0.772
Foreign Language	2	0	0	0	0	1	1	0.000
Commercial	4	0	0	3	1	0	0	1.750
Vocal Music	2	0	2	0	0	0	0	2.500
Instr. Music	2	2	0	0	0	0	0	3.000
Physical Ed.	3	1	2	0	0	0	0	2.666
Art								
Driver Education	1	0	0	1	0	0	0	2.000
Industrial Arts	9	5	4	0	0	0	0	2.777
Trade & Industrial	8	2	1	2	1	2	0	1.437
Diversified Occupations Vocational Agriculture								

TABLE LVII

Distribution of grades for class 6 for the year 1950-51. (Grade 12)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	6	0	0	0	6	0	0	1.000
Social Studies	2	0	0	0	0	2	0	0.000
Mathematics								
Science	3	0	0	0	2	1	0	0.666
Foreign Language								
Commercial	4	0	0	1	3	0	0	1.000
Vocal Music								
Instr. Music								
Physical Ed.								
Art	2	0	0	1	1	0	0	1.500
Driver Education	3	0	1	1	0	1	0	1.500
Industrial Arts	4	0	2	2	0	0	0	1.750
Trade & Industrial Diversified Occupations Vocational								
Agriculture	2	0	1	1	0	0	0	2.250

TABLE LVIII

Distribution of grades for class 7 for the year 1950-51. (Grade 12)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	6	0	0	2	1	3	0	0.833
Social Studies								
Mathematics	2	0	0	0	1	1	0	0.500
Science								
Foreign Language								
Commercial	2	0	0	0	2	0	0	1.000
Vocal Music								
Instr. Music								
Physical Ed.								
Art								
Driver Education								
Industrial Arts								
Trade & Industrial	4	0	0	2	1	1	0	1.250
Diversified								
Occupations	2	1	0	1	0	0	0	2.500
Vocational								
Agriculture								

TABLE LIX

Distribution of grades for class 8 for the year 1950-51. (Grade 12)

Subject	Number of Grades	Grade						Grade Point Average
		H	S ¹	S ²	S ³	S ⁴	U	
English	10	0	0	1	5	5	0	0.700
Social Studies	2	0	0	0	1	1	0	0.500
Mathematics								
Science								
Foreign Language								
Commercial								
Vocal Music								
Instr. Music								
Physical Ed.								
Art								
Driver Education	3	0	1	1	1	0	0	1.833
Industrial Arts	4	0	1	2	1	0	0	1.875
Trade & Industrial Diversified Occupations Vocational								
Agriculture	2	2	0	0	0	0	0	3.000

TABLE LX

Distribution of grades for the school year 1950-51. (Grade 12)

Subject	Number of Grades	Grade					
		H	S ¹	S ²	S ³	S ⁴	U
English	162	9	39	52	38	21	3
Social Studies	86	1	23	16	23	22	1
Mathematics	54	7	15	7	16	9	0
Science	70	2	9	15	23	18	3
Foreign Language	4	0	0	0	0	3	1
Commercial	48	0	6	19	20	3	0
Vocal Music	29	22	4	1	0	2	0
Instr. Music	8	8	0	0	0	0	0
Physical Education	17	4	13	0	0	0	0
Art	7	4	0	1	2	0	0
Driver Education	13	0	3	6	3	1	0
Industrial Arts	36	8	13	10	4	1	0
Trade & Industrial	36	2	10	16	5	3	0
Diversified							
Occupations	2	1	0	1	0	0	0
Vocational							
Agriculture	10	2	2	3	2	1	0

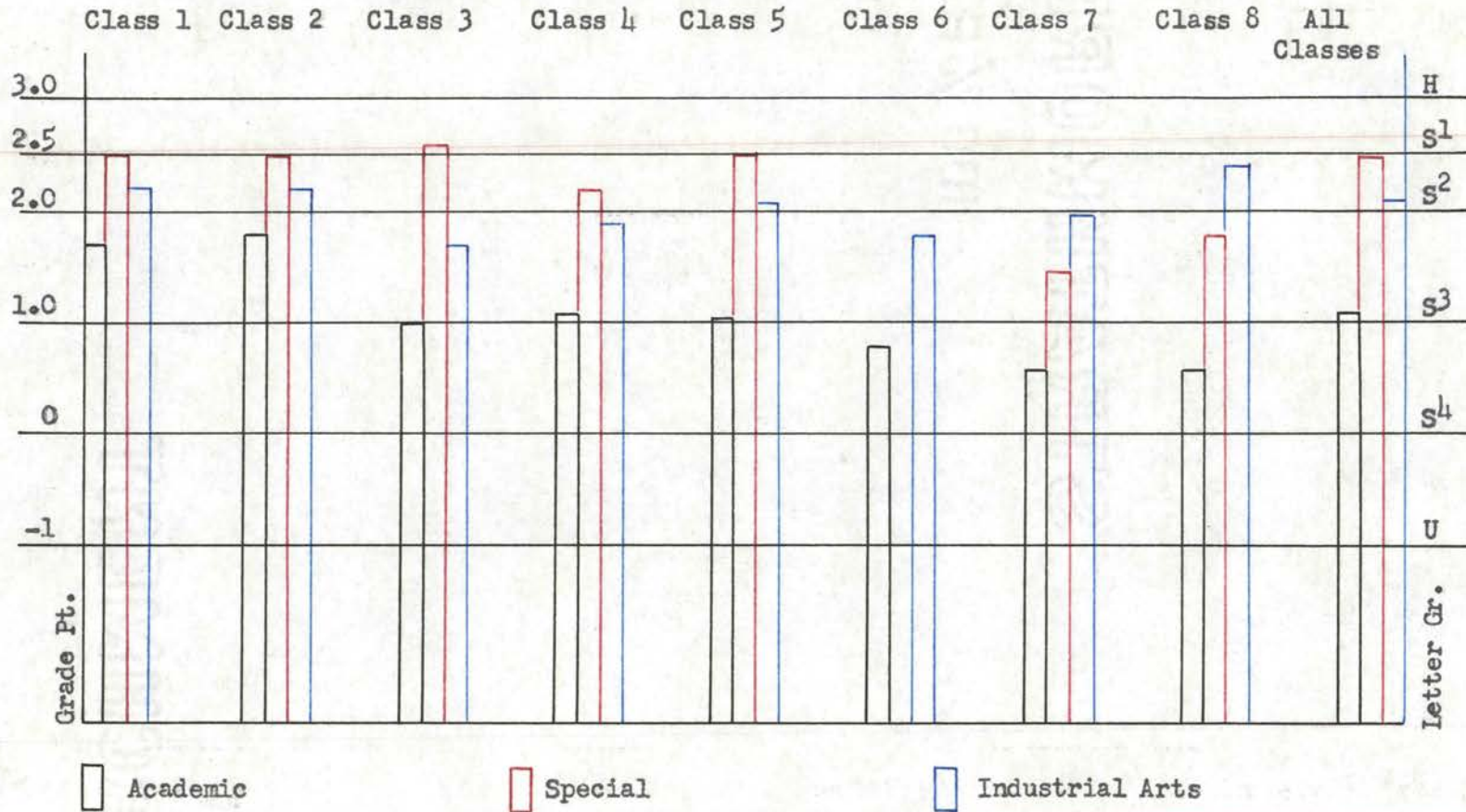
TABLE LXI

Comparison of grade point averages for the school year 1950-51 (Grade 12)

	Subject	Class							
		1	2	3	4	5	6	7	8
Academic Subjects	English	2.202	2.051	1.566	1.525	1.125	0.833	1.000	0.700
	Social Studies	1.657	2.000	0.937	0.962	1.250		0.000	0.500
	Mathematics	2.062	1.781	0.937	1.750	1.437	0.500		
	Science	1.295	1.325	1.400	-0.250	0.772		0.666	
	Foreign Language			0.000		0.000			
	Commercial	1.400	2.000	1.250	1.500	1.750	1.000	1.000	
Special Subjects	Vocal Music	3.000	2.916	2.700	2.333	2.500			
	Instrumental Music	3.000		3.000		3.000			
	Physical Education	2.666	2.700	2.500	2.500	2.666			
	Art	2.333		3.000				1.500	
	Drivers Education	1.500	2.000	2.000	1.750	2.000		1.500	1.833
Industrial Education	Industrial Arts	2.500	2.000	1.875	2.200	2.777		1.750	1.875
	Trade & Industrial	2.000	2.500	2.041	2.000	1.437	1.250		
	Diversified Occupations						2.500		
	Vocational Agriculture			1.375	1.500			2.250	3.000

Graph 11

Comparison of grade point averages in academic, special and industrial arts subjects for the school year 1950-51 (Grade 12)



Graph 12

Comparison of grade point averages and I. Q. averages for the school year 1950-51 (Grade 12)



The Retarded Class. It is felt that the report would be incomplete without some information and comparisons of the group who failed and dropped behind the regular classes. This group will be referred to as the retarded class. Twenty-seven students repeated the seventh grade during the year 1946-47. A grade distribution of the seventh grade appears in Table LXII. It can be seen that the number of failures in the academic subjects was still high. Table LXIII shows the eighth grade distribution. There were six students failing the eighth grade from the regular classes and they are included in this distribution. Fourteen of the 27 repeating the seventh grade dropped out of school. Over one-half of the students taking English failed to make a passing grade. Tables LXIV through LXVIII show the distribution of the other grades. Only three students of all those repeating a grade went on through the senior year to receive a high school diploma. One other student was still in school through the year 1951-52, but did not have enough credit to receive a high school diploma. It is not known whether or not he will attend school in 1952-53. Table LXVIII shows the grade point averages of the retarded class through both junior high school and high school. The industrial arts grade point averages are higher than the academic averages through all grades.

TABLE LXII

Distribution of grades for the school year 1946-47. (Grade 7, Retarded)

Subject	Number of Grades	Grade							
		A	A-	B	B-	C	C-	F	
English	53	0	0	3	7	8	15	20	
Mathematics	53	0	1	2	10	9	13	18	
Science	52	0	1	3	10	14	16	8	
Social Studies	53	0	1	7	9	10	13	13	
Vocal Music	53	0	2	7	16	17	10	1	
Instr. Music									
Physical Education	45	3	9	11	13	6	3	0	
Industrial Arts	53	1	11	5	11	14	5	6	
Latin									
Art									

TABLE LXIII

Distribution of grades for the school year 1947-48. (Grade 8, Retarded)

Subject	Number of Grades	Grade							
		A	A-	B	B-	C	C-	F	
English	38	0	0	1	1	4	10	22	
Mathematics	38	0	0	0	2	4	15	17	
Science	38	0	0	1	3	6	16	12	
Social Studies	38	0	0	0	2	7	17	12	
Vocal Music	34	0	1	2	5	11	9	6	
Instr. Music	4	0	0	4	0	0	0	0	
Physical Education	24	6	2	2	5	1	5	3	
Industrial Arts	38	1	3	6	3	9	10	6	
Latin									
Art									

TABLE LXIV

Distribution of grades for the school year 1948-49. (Grade 9, Retarded)

Subject	Number of Grades	Grade							
		A	A-	B	B-	C	C-	F	
English	23	0	0	1	1	8	4	9	
Mathematics	23	0	0	1	3	7	6	6	
Science	1	0	0	0	1	0	0	0	
Social Studies	23	0	0	0	7	5	7	4	
Vocal Music	1	0	0	0	0	0	1	0	
Instr. Music	4	0	4	0	0	0	0	0	
Physical Education	4	2	0	1	1	0	0	0	
Industrial Arts	12	2	2	3	2	1	2	0	
Latin									
Art	4	0	0	0	4	0	0	0	

TABLE LXV

Distribution of grades for the school year 1949-50. (Grade 10, Retarded)

Subject	Number of Grades	Grade					
		H	S ¹	S ²	S ³	S ⁴	U
English	9	0	0	0	4	5	0
Social Studies	6	0	0	0	1	5	0
Mathematics	2	0	0	0	1	1	0
Science	10	0	1	2	3	4	0
Foreign Language	0	0	0	0	0	0	0
Commercial	2	0	0	0	1	1	0
Vocal Music	2	0	2	0	0	0	0
Instr. Music	0	0	0	0	0	0	0
Physical Education	7	1	6	0	0	0	0
Art	0	0	0	0	0	0	0
Driver Education	1	0	0	0	1	0	0
Industrial Arts	7	0	0	1	3	2	1
Trade & Industrial	0	0	0	0	0	0	0
Diversified							
Occupations	0	0	0	0	0	0	0
Vocational							
Agriculture	0	0	0	0	0	0	0

TABLE LXVI

Distribution of grades for the school year 1950-51. (Grade 11, Retarded)

Subject	Number of Grades	Grade					
		H	S ¹	S ²	S ³	S ⁴	U
English	4	0	0	0	1	3	0
Social Studies	4	0	0	0	1	2	1
Mathematics	2	0	0	0	1	1	0
Science	2	0	0	0	0	2	0
Foreign Language	0	0	0	0	0	0	0
Commercial	4	0	0	0	0	4	0
Vocal Music	0	0	0	0	0	0	0
Instr. Music	0	0	0	0	0	0	0
Physical Education	0	0	0	0	0	0	0
Art	0	0	0	0	0	0	0
Driver Education	0	0	0	0	0	0	0
Industrial Arts	2	0	0	0	1	1	0
Trade & Industrial	2	0	0	1	1	0	0
Diversified							
Occupations	0	0	0	0	0	0	0
Vocational							
Agriculture	0	0	0	0	0	0	0

TABLE LXVII

Distribution of grades for the school year 1951-52. (Grade 12, Retarded)

Subject	Number of Grades	Grade					
		H	S ¹	S ²	S ³	S ⁴	U
English	6	0	0	0	4	2	0
Social Studies	3	0	0	0	2	1	0
Mathematics	0	0	0	0	0	0	0
Science	3	0	0	0	0	3	0
Foreign Language	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Vocal Music	0	0	0	0	0	0	0
Instr. Music	0	0	0	0	0	0	0
Physical Education	0	0	0	0	0	0	0
Art	0	0	0	0	0	0	0
Driver Education	1	0	0	0	1	0	0
Industrial Arts	4	1	0	2	0	1	0
Trade & Industrial	3	0	0	2	1	0	0
Diversified							
Occupations	0	0	0	0	0	0	0
Vocational							
Agriculture	0	0	0	0	0	0	0

TABLE LXVIII

Grade point averages of the retarded group from school year 1947-47
through the school year 1951-52.

Subject	Grade					
	7	8	9	10	11	12
English	1.207	0.605	1.173	0.444	0.250	0.666
Social Studies	1.754	0.973	1.652	0.166	0.000	0.666
Mathematics	1.396	0.763	1.434	0.500	0.500	
Science	1.750	1.078	3.000	0.950	0.000	0.000
Foreign Language						
Commercial				0.500	0.000	
Vocal Music	2.452	1.735	1.000	2.500		
Instrumental Music		4.000	5.000			
Physical Education	3.577	3.166	4.750	2.571		
Art						
Driver Education				1.000		1.000
Industrial Arts	2.773	2.157	3.416	0.571	0.500	1.250
Trade and Industrial					1.500	1.666
Diversified Occupations						
Vocational Agriculture						

Drops and Reasons. Since so many students were dropped from the rolls during this period, an effort was made to determine the causes for so many leaving the schools. Table LXIX shows the results of this study. No records were available showing the reasons for some of the drops and in these cases teachers, principals, and registrars were questioned to obtain as much information as possible. The largest number of these students were those who quit school. The next largest group who did not graduate from the Ponca City High School consisted of students moving out of the community. Of the seven who were called to duty with the 45th division, it is the intention of four to return to school this year to complete work on their high school diploma.

Diplomas Granted. Table LXX lists by classes the number, type, and year diplomas were granted. Of 169 students appearing on the original rolls, a total of 73 completed work for a diploma. Graph 13 gives a comparison by classes, showing the number enrolled in the seventh grade in the school year of 1945-46, and the number completing work for a high school diploma. It also shows the number attending college during the first year following graduation.

TABLE LXIX

Reason for drops

Class	No. in Class	Quit	Joined Armed Forces	45th Division	Unknown	Private School	Moved out of Community
1	18	0	0	1	0	0	2
2	18	0	0	0	1	0	4
3	19	0	1	0	1	0	4
*4	21	1	1	0	3	0	6
5	28	3	6	1	4	1	3
6	26	15	1	3	2	1	2
7	20	11	1	0	2	0	2
8	19	8	1	2	0	1	1
Total	169	38	11	7	13	3	24

* 1 still in school, having failed two years

TABLE LXX

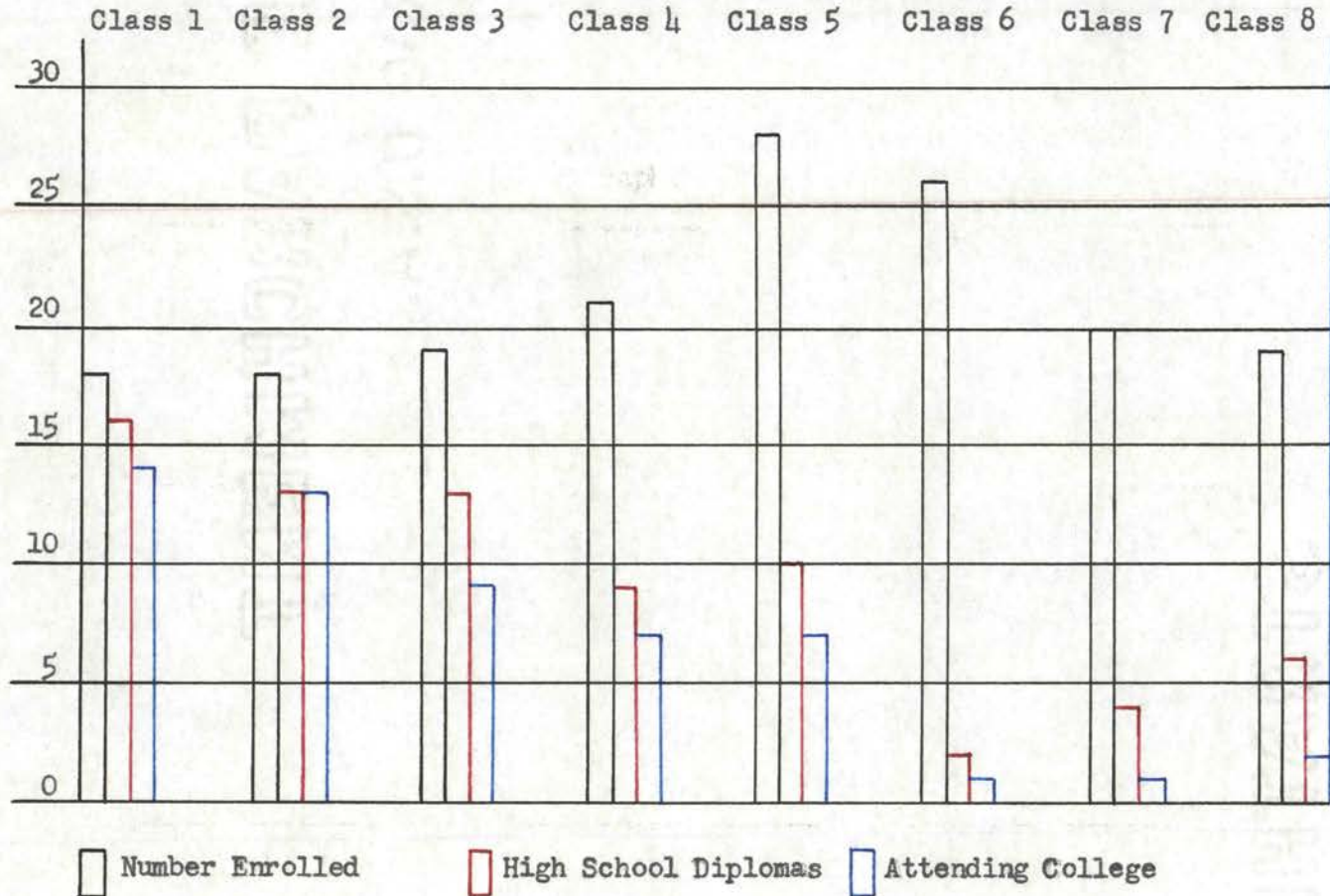
The type, number and year diplomas granted--by classes.

Class Number	No. in Class	Type Diploma				Total	Year Received	
		General	Commercial	Vocational	College Preparatory		1951	1952
*1	18	0	0	3	13	16	16	0
2	18	1	0	1	11	13	13	0
3	19	2	0	6	5	13	13	0
4	21	3	1	4	1	9	9	0
5	28	6	0	1	3	10	10	0
6	26	1	0	1	0	2	2	0
7	20	3	0	1	0	4	3	1
8	19	3	0	2	1	6	4	2
Total	169	19	1	19	34	73	70	3

* 1 granted diploma for work done while in service with 45th division.

Graph 13

Comparisons showing the number enrolled in classes in the seventh grade, the number receiving high school diplomas, and the number attending college



Upon passing to the ninth grade, academic subjects in general were required, with the exception of foreign language and science. Most of the special subjects and all of the industrial subjects are selected by the student. Grades in required subjects usually are lower than those in elective ones. This is true because a student usually selects a subject in which he is interested and also one in which he feels that he excels. Since industrial education subjects and special subjects are elective, they should probably show higher grade point averages than the academic subjects. Since all are required in the seventh and eighth grades, it is felt that these two grades give better comparative results in a study of this nature.

CHAPTER V

CONCLUSIONS

In making a study of this nature, it is not reliably possible to make any positive statements. Many students who under normal circumstances would probably have finished school, left to join the armed services, and several were called to active duty with the 45th division. It is believed, however, that some definite trends have been established by this study.

The Findings Summarized. In making a summary it is necessary to remember that the problem had two purposes; one to compare academic grades and special subject grades with those of industrial arts grades, and the other to determine the effectiveness of the method of achievement grouping used in the Ponca City Junior High School. The findings in general show that the academic grades during the period of this study were lower than both industrial education and special subject grades, and that special subject grades were higher than industrial education grades. The tabulations also indicate the classes grouped by actual academic achievement in the elementary school showed trends toward a comparable achievement in the junior and senior high schools. All I. Q. comparisons showed a tendency for the classes ranked lower by actual academic achievement to more nearly work to the peak of their scholastic abilities than those ranked higher by academic achievement as compared to their respective I. Q. averages.

Three conclusions are reached by this study: (1) That in a comparison of academic subjects, special subjects, and industrial education subjects, there is a tendency for the special subjects to have the high-

est grade point average, industrial education subjects to have the second highest grade point average, the academic subjects to have the lowest grade point averages; (2) It is indicated that the needs of the pupils can be more nearly satisfied by the method of academic achievement grouping, and (3) that there is a general trend for students with lower I. Q.'s to work more nearly to the peak of their scholastic capacity compared to their I. Q.'s, than those students with higher I. Q.'s.

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