FORCES IN THE MAKING OF THE HIGH SCHOOL CURRICULUM

A THESIS

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By

CLARENCE EDWARD OLSON

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H. G. Lull

Approved for the Graduate Council

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CHAPTER I

INTRODUCTION

The Purpose and Scope of the Study

The high school curriculum is composed of a number of courses, taught to satisfy a number of aims, some of which are conflicting. It is with an appreciation of the importance of that situation that this study has been undertaken. This study, therefore, is an attempt to analyze the forces that have been at work in the making of our high school curriculum since the Civil War. It does not include all forces in the making of the curriculum; rather it is an attempt to clear the ground and to provide a basis for continued observation and investigation, which may lead to constructive conclusions.

The Method of Study

The groundwork for the study lies in the social conditions and the educational theories that lie back of our secondary education. Out of the study the writer makes a statement of what seem to be the outstanding forces and trends that have had a hand in the making of the curriculum. From that point the writer undertakes an investigation of both primary and secondary materials to determine the reliability of his original statement of forces and the effect that these forces had upon the various branches of the curriculum.

The High School Curriculum Before the Civil War

The high school has made its greatest development since the Civil War. This development, however, has to some extent been dependent upon the type of high school curriculum that existed prior to the Civil War. The writer, therefore, is making a brief statement as to the nature of the high school curriculum as it existed in the period from 1821 to 1865.

The original aim of the high school was to prepare the pupils for the active duties of life. This continued to be its chief aim during this period. However, the high school had also gained some recognition as a college preparatory school.[1] By the end of the pre-war period eight high school subjects fulfilled college entrance requirements.

In this period the course of study was essentially a book-study course, usually three years in length and the same for all students.[2] The subjects which were usually taught were reading, writing, geography, arithmetic, English grammar, history, and constitution of the United States, bookkeeping, ancient and modern history, rhetoric, logic, intellectual and moral philosophy, natural philosophy, astronomy, algebra, geometry, trigonometry, Latin and Greek.[3] The first six of these have dropped back into the elementary school.[4]

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[1] Elwood P. Cubberley, Public Education in the United States, p. 409.

[2] Ibid., p. 408.

[3] Emit Duncan Grizzell, Origin and Development of the High School in New England, pp. 292-295.

[4] Cubberley, Op. Cit.

Any subject of the curriculum had at least one excuse for being there. Either it satisfied the theory of mental discipline or it served as an information subject to meet the needs of the time. The greater of the two, however, was the theory of mental discipline and as soon as the informational subjects were given clear mechanical structure they too were approved by its champions.[5] These informational subjects were largely memoriter.

Such was the general nature of the curriculum in the period prior to that of the great industrial development of our nation. It was the curriculum of the high schools, most of which were located in the cities of New England and also later in the old North-West Territory.[6] This was the situation at a time when American life was primarily rural, although urban centers were growing in number and size. In whatever manner, it served the needs of the time, it was destined to have a part in shaping the high school curriculum of the industrial period which was to follow.

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[5] H. G. Lull, Secondary Education, Orientation and Program, p. 10.

[6] Report of the United States Commission of Education, (1904), Vol. II. p. 1782.

CHAPTER II

FORCES IN THE MAKING OF THE HIGH-SCHOOL CURRICULUM

Section I. Traditional Forces

Mental Discipline

One of the outstanding forces in the shaping of the high-school curriculum has been the doctrine of mental discipline. This was the doctrine that power derived from the study of one subject could be applied in any field of mental effort. This theory had been in existence since the days of Plato, who used mathematics to train the mind in abstract thinking.[1] John Locke had given classical expression to it in the seventeenth century.[2] It had reached its greatest stage of popularity in Europe in this same century.[3] In the early part of the nineteenth century the basis for it was exploded by Herbart and others.[4] Yet this theory was accepted by the majority of American secondary-education teachers throughout the nineteenth century. It was accepted primarily because it served as a defense mechanism. In a negative way a conflict between prevailing social conditions and the classical traditions was responsible for its acceptance by the high school in its early years. Classical subjects had been handed down to the high school from the

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[1] Herman Harrell Horne, The Democratic Philosophy of Education, pp. 73-74.

[2] Horne, Op. Cit.

[3] H. G. Lull, Secondary Education, Orientation and Program, p. 9.

[4] Calvin Olin Davis, Our Evolving High School Curriculum, p. 34.

academies and grammar schools. These subjects satisfied the preparatory aim, which many high schools had adopted, but laymen argued that they did not satisfy practical needs. Therefore educational and community leaders who wished the high school to prepare their children for college were forced to defend their case. This they did with the theory of mental discipline. They popularized the idea with the slogan, "What best fits for college best fits for life."[5] The theory of discipline was thus accepted by the pupils for the remainder of the century. During the first part of the period the college helped to perpetuate this theory and practice in the high school. This is made clear by William T. Harris in his report of the St. Louis Public Schools for 1872-1873.[6]

> According to the theory on which college education rests, the preparatory schools should confine their work almost entirely to the disciplinary studies. The mathematics, and Latin and Greek are the main requisites for admission.

This force of mental discipline remained the strongest force to the end of the century and caused some new subjects which had been introduced into the high school because of social demands to be perverted from the original function into channels of formalized procedures.[7] The continued influence to the end of the century is pointed out by H. G. Lull in his dissertation entitled Inherited Tendencies in Secondary Instruction in the United States.[8]

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[5] Horne, Op. Cit., pp. 73-74.

[6] Report of the United States Commission on Education, (1893-94), Vol. I, p. 619.

[7] Lull, Op. Cit., pp. 2-3.

[8] H. G. Lull, Inherited Tendencies in Secondary Instruction in the United States, pp. 219-220.

> The Harvard admission examinations of 1877-78 serve to illustrate the relative emphasis placed upon the various admission branches. One half of the entire number of requisitions under the first method of examination were Greek and Latin, three were mathematics, and five were ancient history and geography, modern and physical geography, English composition, French or German, and physical science. The second method of examination required four requisitions of Latin and Greek, seven of mathematics, and five of the other branches as in the first method. This examination system remained intact until 1899. Not only were the preparatory students compelled to emphasize their studies according to the proportion of one of the two methods of examination above indicated, but also to spend their entire secondary school period in pursuing the studies of the one group or the other. So, practically these requirements made the main course in all the larger high schools and the only complete course of the small high schools which were preparatory schools for college.

Since the turn of the century and even today evidences of the theory of mental discipline are noticeable. However, other forces have had a more predominant influence.

Religion

Another traditional force was that of religion. It existed in spite of the fact that the theory of religious freedom was accepted by the high school. This force apparently was not very strong but high school Bible courses and the subject matter of science texts occasionally reveal the aim to establish a faith in a ruler of the universe.[9] Undoubtedly there was a survival of the theological spirit of the Puritan which had dominated education in the early days of American history.[10] Perhaps it made itself felt mostly through the force of inertia. American schools had always

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[9] Edward Hitchcock and Edward Hitchcock Jr., Elementary Physiology, p. 431.

[10] H. G. Lull, Secondary Education, Orientation and Program, pp. 1-2.

considered this to be an important aim, so why should not the high schools do so even after the Civil War? Although there is no general trend to incorporate religion into the curriculum,[11] the propaganda campaigns of the churches had their effect. That such campaigns were carried on with some degree of success is shown by such statements as the following extract from the minutes of a meeting of the State Board of Education of Virginia in August 1916.[12]

> In response to a widespread desire throughout the State, voiced by resolutions adopted by various religious and educational organizations, the State Board of Education of Virginia hereby authorizes high school principals to give such pupils as fulfill the requirements set forth in the official syllabus of the Bible Study prepared by the committee appointed by the board, not less than half a unit, nor more than half a unit of credit for Bible courses in lieu of regular High School electives of like credit value.

Narrow denominationalism, however, has been a force which had hindered the development of the high-school curriculum. At this point it is a noteworthy fact that religious groups have been able to demand certain church membership of the high school teachers. Mr. R. C. Maul of the Placement Bureau of the Kansas State Teachers College says that because of the predominance of a non-catholic public in Kansas it is more difficult to place teachers of the Catholic faith in public schools than teachers of no church membership whatever. Such theological attitudes on the part of the general public have rather led to the exclusion of vital moral and religious teaching than to the inclusion of it. The National Educational Association in

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[11] Charles H. Judd, "Education," Recent Social Trends, p. 371.

[12] Sadie Bell, The Church, The State and Education in Virginia, p. 500.

convention assembled in Cleveland, Ohio, July 1, 1908, made the following declaration illustrating the effect of such narrow denominationalism:[13]

> It is apparent that familiarity with the English Bible as a masterpiece of literature is rapidly decreasing among the pupils in our high schools. This is a direct result of a conception which regards the Bible as a theological book merely, and thereby leads to its exclusion from the schools.

In spite of the negative results which have come about because of more narrow denominationalism, the schools have been pervaded by a desirable moral atmosphere through the influence of the personal characters of the instructors.[14]

Section II. The Scientific Movement

The modern scientific movement which was a theory of inductive logic as it operates in the realities of nature had a great influence upon the growth of the curriculum. Although this movement had made progress for over two centuries it did not greatly affect the high-school curriculum before the Civil War. In the seventeenth century the Greek developments in astronomy and medicine were upset by such investigators as Copernicus, Newton and Harvey, and from that time there was a rapid development in all lines of science.[15] In the nineteenth century, science took the form of application to problems of labor, production, transportation, hygiene,

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[13] George Ellsworth Johnson, "Religious Instruction in the Public Schools" in Lewis Boyles Paton's Recent Christian Progress, p. 429.

[14] Elmer Ellsworth Brown, The Making of our Middle Schools, p. 427.

[15] Frank Pierpont Graves, A History of Education in Modern Times, p. 321.

sanitation, etc.[16] Moreover, the influence of the new nineteenth century discoveries had added new and valuable thought to the fields of science.[17] The theory of the conservation of energy and the theory of cellular tissues led scientists to coordinate phenomena under a few basic laws instead of merely classifying separate elements. The principle of natural selection also led scientific men to find the purpose and reason of things instead of merely bringing individual facts into their proper places in a scheme of the universe. At the same time, some important men began to insist upon the inclusion of sciences in the curriculum. They argued that the education of their time directed all attention to subjects that really never gave one the knowledge necessary to make life successful, useful and happy.[18] They believed that the remedy for the situation was to be found in the introduction of science into the schools. Among the advocates was Herbert Spencer who held that the function of education was to prepare for living and that science composed the knowledge of most worth for this purpose.[19] Thomas H. Huxley also showed the need for scientific education. He followed the same line of argument as did Spencer, but popularized the scientific needs much more by bringing these conclusions into simple language.[20]

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[16] Ibid., p. 325.

[17] Arthur Twining Hadley, Some Influences in Modern Philosophic Thought, pp. 22-39.

[18] Paul Monroe, A Brief Course in the History of Education, p. 352.

[19] Graves, Op. Cit., pp. 326-330.

[20] Ibid., pp. 330-331.

Leaders in America began a campaign for science in the schools. One of these scientists was Edward L. Youman, who popularized the work of the great scientists by various publications among which were articles in the Popular Science Monthly, a magazine which he founded.[21] Another early champion for the sciences in American schools was Charles W. Eliot who argued that they were moral forces of great intensity because they were the chief factors in modern civilization.[22] As president of Harvard he was in a position which made it possible for him to realize the goal of establishing science in schools. He accomplished some of this through lectures and some by the establishment of the elective system. This, as will be seen later, had an effect upon the high school[23]

The scientific movement entered the high school through more than one road. The academy had prepared the way over which the scientific movement itself was later to come. It was the first American institution to offer instruction in science courses.[24] These courses were offered for their practical value. This later helped give the scientific movement to the high school in two ways. First, since the high school was set up originally for the purpose of preparing for life and since the academy had already accepted the teaching of science subjects, the high schools naturally did the same. Therefore, scientific subjects were already in the schools

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[21] Ibid., p. 332.

[22] Ibid., p. 33.

[23] Monroe, Op. Cit., p. 350.

[24] Ibid., p. 365.

when the real scientific movement began. The other way in which the academy prepared the way for the scientific movement in the high school was indirect and by way of the college. The early academy had had an influence upon college entrance requirements.[26]

> By offering more preparatory instruction than was required, by being able to demand and secure advanced credit for their graduates entering college, by introducing a high-grade English department, which included courses in English, mathematics and science, the larger endowed academies in some cases forced the colleges to increase their entrance requirements.

Since the high school later took on the preparatory aim the same influence was felt upon its curriculum. We see therefore, that the academy had prepared the way for the entering of the scientific movement in the high school.

The scientific movement in education was not a theory of psychology. It was a theory of inductive logic and operated in the realities of nature rather than in the products of humanism. Later, this method of inductive logic was applied to the humanities. One of the characteristics of the form that this movement took in education was a recognition of a transendant value of the inductive method of study.[27] This method had great possibilities of improving instruction, but it is noteworthy that it often became superficial and lost much of its value. For instance, the laboratory method was introduced into science instruction often with the result that emphasis was placed upon the mere completion of several formal steps.[28]

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[25] Ibid., p. 365.

[26] E. G. Lull, Inherited Tendencies in Secondary Instruction in the United States, p. 179.

[27] Monroe, Op. Cit., p. 350.

[28] John F. Woodhull, The Teaching of Science, pp. 9-20.

Perhaps the chief characteristics of the form that the scientific movement took in education was the emphasis upon the importance of the content of studies out of knowledge of the phenomena of nature.[29] In 1895 Charles De Garmo pointed to the development of natural science and mathematics. He said:[30]

> Mathematics won its prominent place in our curriculum largely through the results obtained by Newton and his contemporaries. To it chiefly we owe our modern scientific development. The latter half of the nineteenth century has seen the rise and perfection of natural sciences as instruments of education. Taught at first by literary methods, they make but little impression, but during the last twenty-five years they have developed a method of their own-that of inductive research and verification in the laboratory.

The scientific movement, however, did not stop with its influence upon the natural sciences. Through the influence of the Herbartians it also affected the social subjects. Leaders came to the point when they realize that,[31]

> the progress of civilization, so far as it is worth recording, is the record of the displacement of animal excellences by human ones and savage virtues by civilized ones.

In the curriculum this latter point of view was reflected by a much increased emphasis upon the social studies and English literature.

Section III. The Psychological Movement

The psychological movement was the movement which was concerned with

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[29] Monroe, Op. Cit., p. 350.

[30] Charles De Garmo, Herbart and the Herbartians, p. 231.

[31] Hadley, Op. Cit., pp. 33-37.

the study of the mental development of the child. In the eighteenth century Rousseau freed the world from old dogmatism about materials of education and started the modern movement for the study of children.[32] Later in the same century under the leadership of Kant education was recognized as a problem for psychological analysis.[33] Some of the later eighteenth and early nineteenth century psychological interpreters of education had had direct influence upon the American high school. Among these Pestalozzi, Herbart, and Froebel are the outstanding practical leaders.[34]

Pestalozzi looked upon education as the chief means of social reform. He, however, defined education as the natural development of human capacities. To him education, therefore, was the development of all the powers and faculties of the human being.[35] Real education was to develop in the child the elements of power implanted there by nature, by furnishing him, in appropriately selected and graded series, the material of experience needed for the natural exercises of his capacities. His general method was training in observation through the surrounding materials, analysis into its simplest elements, and expression in words.[36] These received special application to language, arithmetic, drawing, writing, geometry, geography, natural science, history, music, and morality.

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[32] Joseph K. Hart, The Discovery of Intelligence, p. 307.

[33] Ibid., p. 318.

[34] Monroe, Op. Cit., p. 307.

[35] Graves, Op. Cit., p. 136.

[36] Ibid., pp. 139-140.

Some hold that the significance of much of Pestalozzi's work lies in the fact that he succeeded in establishing the principle that experimentation was to take the place of tradition.[37] Teachers and publicists watched his experiments with interest. Many teachers and followers in Europe worked along lines started by him.

In the first half of the nineteenth century Pestalozzian ideas were introduced to American educational leaders; first, through a large number of reports, articles and translations, and, second, through applications made to various elementary-school subjects by such men as Warren Colburn, Arnold Guyot, Francis Wayland Parker, and Lowell Mason.[38] The real introduction of Pestalozzian ideas and methods in the United States, however, was made through the efforts of Edward A. Sheldon of Oswego, New York.[39] He introduced Pestalozzian methods in his schools in the sixties. In 1865 the Board of Education of Oswego dignified the work he was doing by creating a city normal school to train teachers, and as a consequence Pestalozzian ideas were spread throughout the United States.

Soon after the establishment of the Oswego Normal School the principles of Pestalozzi were adopted by the American high school to a small extent. But instead of accepting the spirit of his principle of sense perception it adopted his theory of faculty psychology and the more formal features of the inductive method. Its greatest effect, therefore,

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[37] Monroe, Op. Cit., p. 308.

[38] Graves, Op.Cit., pp. 150-152.

[39] Ibid., p. 153.

was to establish the idea that sense perception, and not memory and reason were primarily worthy of cultivation. Perhaps the failure of the Pestalozzian spirit to establish itself in the high school at this time was due to the efforts of those educators and community leaders who argued that "what best fits for college best fits for life." This was discussed in the section on traditional forces.*

Johann Frederick Herbart conceived of the mind as a unity rather than divided into faculties.[40] To him the mind has only one power, that of entering into relation with its environment through the nervous system.[41] Through this relation the mind is furnished with the primary "presentation" of sense perception, and from this the whole mental life is developed. Herbart also held that the aim of education is virtue.[42] He held, however, that in order to realize this final aim of education another must be set up.[43] To him the arousing of interest is the means for securing the appropriation of new ideas or presentation through their apperception, so that they may enter into the constitution of new virtues in the child's mind and thus form a new and more elaborate and more secure basis for conduct. According to the doctrine of apperception the mind is composed of masses of ideas, each with its own characteristic nature. These various masses of ideas welcome other ideas of the same general character and assimilate them

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[40] Ellwood P. Cubberley, Public Education in the United States, pp. 313-14.

[41] Monroe, Op. Cit., p. 321.

[42] Ibid., p. 321.

[43] Ibid., p. 325.

* See p. 5.

to make them a part of the existent mass which in turn gives vital significance to all new material taken into the mind.[44] On the other hand, contrary ideas repel and in the process of rejection the individual develops his true self.[45]

In practice, two things become necessary according to this theory: first, the proper selection of subject matter, and second, a proper method of instruction. Herbart worked on both. His work on the former gave rise to the idea of correlation and unification of studies. With this idea in mind he also developed the two important subjects of history and literature, with the emphasis on the social side.

With respect to a method for securing the proper interpretations of all new ideas Herbart worked out a scheme which included four definite formal steps. These were preparation, presentation, association, and application.

Students and followers of Herbart spread as well as modified his teachings. These followers, especially Ziller, developed the culture epoch theory from Herbart's ideas that in the youth of the race were to be found the same activities and interests that were natural to the youth of the individuals.[46] They expanded this idea to mean that the stages of culture in the development of the race are paralleled by the stages of mental development of the individual. Consequently in order to follow the proper

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[44] Hart, Op. Cit., p. 333.

[45] Monroe, Op. Cit., p. 324.

[46] Monroe, Op. Cit., p. 326.

order in the psychological development of the child the materials of instruction should be selected and arranged to fit the stages in the cultural development of the race.

In the last decade of the nineteenth century the Herbartian movement gained strength in America. It was stimulated by the efforts of the Americans, who studied in Jena, Germany, and returned with the ideas of Herbart and of his followers there.[47] These men popularized their ideas by their formation of the National Herbartian Society in 1892. This society published literature on such topics as interest, apperception, correlation, recitation methods, moral education, the culture epoch theory, training for citizenship, and the social function of history and geography.[48] As a result of its campaign normal schools took up the same line of thought.

During the last decade of the century the Herbartian movement was instrumental in the changing of the viewpoint in the teaching of history and literature. In history courses since that time more attention has been given to socially significant material and less to insignificant facts concerning wars and politics. Type studies have also taken the place of studies of isolated facts. In history, for instance, attention has been given to such type studies as the internal development of our nation, the development of the West, the growth of political parties and the evolution of transportation.[49] The same idea has been applied to instruction in

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[47] Cubberley, Op. Cit., p. 116.

[48] Ibid., p. 317.

[49] Ibid., p. 541.

literature and civics. The Herbartian movement also led to further studies in educational psychology. With it (and also the Froebelian movement) the educational process began to find its justification in an underlying basis of psychology.[50] It is a significant fact that the Herbartian Society by the end of the century was changed to the National Society for the Study of Education. Through it as well as other channels the Herbartian ideas have had a marked effect in the later integration movement.*

Froebel believed that the explanation of reality and of life was to be found in the fundamental unity of existence of nature and of man in the absolute spirit.[51] He believed that this is self-conscious spirit. To him, therefore, the purpose of education was to expand the life of the individual until it should comprehend this existence through participation in this all-pervading spiritual activity.[52] He believed that nature revealed God to the child; consequently, he advocated nature study.[53] He saw the unity of organic life and thus became an advocate of the theory of evolution and from this he was led to place new emphasis upon the sciences. Froebel, however, believed that only through activity could the mind become conscious of itself. Consequently he believed in self-activity as the general method in education.[54] By this he implied more than mere activity; the child carries out his own impulses and decisions. He, therefore, considered play

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[50] Graves, Op. Cit., p. 398.

[51] Monroe, Op. Cit., pp. 332-337.

[52] James L. Hughes, Froebel's Educational Laws for All Teachers, pp. 49-50.

[53] Ibid., pp. 179-196.

[54] Ibid., pp. 84-102.

* See Section 5, Chapter II.

and manual activities as basic in education.

Some of the Froebelian ideas entered our high school by way of the Russian engineering school. Through the inspiration from Froebel Uno Cygnaeus started this manual training movement in Finland. This soon spread to other European countries and finally was suggested to the United States by a Russian government exhibit at the Centennial Exposition of 1876 at Philadelphia. Shortly after, manual training courses were established in several high schools, although these bore few marks of Froebelian teaching.* Perhaps more of Froebelian ideas entered the high school by way of the kindergarten. Froebel had developed the kindergarten as a response to his theory of self-activity. There he trained his pupils self expression through play, construction, nature study, and romance and ballads.[55] Such schools had been established in the United States in the fifties by educated Germans who had emigrated to America because of the Revolution of 1848. Elizabeth Peabody became interested in these schools and really introduced them to the American public. She not only established a kindergarten, but she also made a careful study of Froebelianism and in 1868 established the first training school for kindergartners in the United States.[56] The kindergarten idea was then popularized and soon spread all over the United States. From these schools the Froebelian ideas entered the field of educational theory and as a result made their way into the

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[55] Graves, Op. Cit., p. 223.

[56] Graves, Op. Cit., p. 248.

* See Section 6, Chapter III.

high school especially in the heuristic (or discovery) method of learning the sciences. In the early part of the twentieth century Hughes made the statement that the law of self-activity was recognized as fundamental by all educational leaders.[57]

Froebelianism has been very evident in the high school curriculum for the past forty years. In fact, it is one of the essential features of the integration movement.* Perhaps no other subject has been more influenced by the teaching of Froebel than manual training. Manual training is now often taught because of its vocational significance. The teachers of it, therefore, aim to direct the child to activities which give opportunities for life adjustment. Manual training, however, does not have a monopoly upon this kind of teaching. To a greater or lesser degree we find such teaching in all branches.

Section IV. Social and Industrial Conditions

Great changes in the ways of living have taken place since the Civil War. The following quotation from Cubberley serves as a picture of some of the material results of this change:[58]

> We can perhaps get a better idea of the tremendous industrial development of the United States since 1860 if we try to picture ourselves the things with which Lincoln was unacquainted. When he died, in 1865, the world was relatively simple and undeveloped, and business methods were old-fashioned compared with what we know

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[57] Hughes, Op. Cit., p. 104.

[58] Ellwood P. Cubberley, Public Education in the United States, (Revised), p. 491-499.

* See Section 5, Chapter II.

today. If Lincoln were to return now and walk down the streets of Washington, he would be astonished at the things he would see. The beautiful city which would now meet his gaze, and the large and beautiful buildings in which the government business is now carried on, would alike be a matter of wonder to him. Buildings more than three or four stories high would be new, as the steel-frame and reinforced concrete buildings were alike unknown in 1865. The large plate-glass show windows of the stores, the electroliers along the curb, the moving-picture establishments, the electric elevators in the buildings, the beautiful shops, and especially the big department stores would be things in his day unknown. The smooth-paved streets and cement side-walks would be new to him. The fast-moving electric street-cars and the thousands of motor-vehicles would fill him with wonder. The air-plane overhead he would not understand at all. Entering the White House, the sanitary plumbing, air conditioning, steam heating, electric lights, electric fans, electric refrigerator, telephones, typewriters, teletypes, modern office furniture and filing devices, the Edison phonograph and the dictaphone, and the fountain pen would have to be explained to him. In his day plumbing was in its beginning, coal-oil lamps and gas-jets were just coming into use, and the steel pen had but recently superseded the quill. There were stenographers then, but all letters and papers were still written out by hand. As for communication, messenger boys with written notes ran everywhere on foot, and the transaction of all kinds of business was exceedingly slow. The telegraph had recently been installed, but it still required two weeks to get news from England, and two months from Manila or Valparaiso.

The steel rail, the steel bridge, fast vestibuled trains, high-powered locomotives, transcontinental railways, dining-cars, refrigerator cars, artificial ice, friction machines, repeating rifles, machine guns, smokeless powder, submarines, air planes, tanks, dynamite, TNT, money orders, special-delivery stamps, weather reports and flags, the parcel post, air-mail, gasoline engines, electric motors, type-setting machines, chemical fire engines, self-winding watches, player-pianos, phonographs, moving pictures, the cable, the wireless, the traction engine, the cream separator, the twine binder, the caterpillar tractor--these and hundreds of other inventions in common use, which now simplify life and add to our convenience and pleasure, were all alike unknown. The cause and mode of transmission of the great diseases which decimated armies and cities--plague, cholera, malaria, yellow-fever, typhoid fever, typhus, and dysentery--were all unknown. Anaesthetics, sanitary

plumbing, paved streets, sleeping-cars, and through railways were just coming in when Lincoln died, while such terms as 'bacteria', 'eugenics', 'evolution', 'sanitation' were seldom used or entirely unknown. Much of what everyone ate or wore was still manufactured in the home, the apprenticeship system still ruled in almost all lines, and every youngster still had 'chores' to do and enough physical and manual activity to answer all human needs. Life was still relatively simple, agriculture was still the great industry of the people, and 77.8 per cent of the people of the Nation still lived on the farms. But 16.1 per cent had settled in cities of 8000 or more inhabitants, and there were but 141 of these in the entire United States. Even in these cities the character of living was far simpler than in a western town of six hundred people today.

. . . .The drudgery and wasteful toil of life have been greatly mitigated. People have leisure for personal enjoyment previously unknown. The radio, the automobile, and the 'movies' have brought information, recreation, and enjoyment to millions of people who in previous times knew only work, and whose pleasures consisted chiefly of neighborhood gossip, church attendance, and drink. Wages have increased faster than the cost of living, the advantages of education have been multiplied and extended, health conditions in home and shop and town are better than ever known before, far more is done for people by the corporations and the State than formerly, and the standard of comfort for those even in the humblest circumstances has advanced beyond all previous conceptions. The poorest workman today can enjoy in his home lighting undreamed of in the days of the tallow candles, warmth beyond the power of the old smoky soft-coal grate, kitchen conveniences and an ease in kitchen work that our New England forefathers probably would have thought sinful, and sanitary conditions and conveniences beyond the reach of the wealthiest even half a century ago. If the owner of the poorest tenement house in our cities today were to install the kind of plumbing which was good enough for George Washington, we would lock him up in jail. The family as a unit has gained tremendously by the changes of the past forty to fifty years; the losses have come to the children, and to society and government.

The outstanding characteristics of the change is the development of business enterprise with its resulting social and industrial problems.[59]

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[59] Ibid., pp. 493-494.

This development of business enterprise is characterized to no small degree by a shift of population from rural to urban areas. "Since 1860 cities have increased in number and in the complexity of their life. From 141 cities of 8,000 inhabitants or over in 1860, there are over 1200 such cities today, and over 16,600 incorporated towns and cities of all sizes. Over one-half of our people today live in incorporated towns or cities, as against one-sixth three quarters of a century ago." This urban group of people became a polyglot mass without common ideals because some came from rural sections and therefore possessed ideals of rural life and others came from various foreign lands and therefore possessed foreign standards of life.

The development of machine industry has been characterized by a vast increase in the output of goods. The value of the output of manufactured goods continually increased from $4,232 millions in 1870 to $62,713 millions in 1925. In the same period of time the value of farm products increased from $1,958 millions to $9,531,495,000.[60] Not only has the total output of goods increased but also the output per person. In 1870 the general value of the output per employee in manufacturing establishments was $2,060 but in 1925 it had increased to $7,479. During the same period of time the average value of output per farm employee increased from $322 to $908. Until the passing of the frontier in 1890 most of the goods found a market in our country which was continually increasing in population and expanding westward. Since then, however, the West has not served as a

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[60] Encyclopedia Americana, Vol. 27, p. 506.

safety valve. For about thirty years after the turn of the century we disposed of our surplus goods on the world market. Now, however, our population is not increasing so fast as production and we no longer can find ample foreign markets.[61] The result is that millions are thrown out of work while the few continue to produce more goods than there is a market for under present conditions. It seems that we need a system by which individual workers are permitted to consume an amount of goods more nearly equal to the value of the goods that they and the machines produce. This change is by no means confined to city life, but is also noticeable in rural life. Modern machinery and methods have now broken down the harsh conditions and isolation of early rural life. That, however, is not the only significant change. Other significant changes have come with the passing of the frontier in 1890 and the establishment of new foreign markets since that time. During the first part of the period free government land was available and therefore most farmers became land owners. During the present century, however, this early type of farmer has been replaced by the tenant farmer. Because of the introduction of power machinery and the opening of new markets farming also changed from a self-subsistence industry to a business enterprise, which is dependent upon all other parts of the world. The demands for the farmers' products, like the demand for the laborers' products have not been equal to production and therefore the farmer is a victim of the same economy of plenty.

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[61] Weekly News Review, (April 22), 1935.

The development of machine industry is also characterized by a number of other social changes:[62]

> This concentration is further seen in the shift of production of goods from small shops, where men worked together in close companionship, to huge factories with their impersonal character and with subordination of the mass of hands to superintendents and bosses, and to the general adoption of a semi-military discipline. It is exhibited in all phenomena of standardized mass production. It has led to the concentration of wealth in corporate forms in order to secure the capital needed to carry on mass production on a larger scale and to relieve individual investors of undue personal risks. There has followed in turn the concentration of great wealth in the hands of the few, with an accompanying concentration there of effective power in the direction of social affairs, the setting of standards, the moulding of public opinion.
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> In spite of this practical transformation of social conditions, amounting to a revaluation, the theories, watchwords, and slogans of earlier agrarian period have been maintained and cherished. The industrial and commercial class which made use of governmental power for franchises and special favors had definite reasons for gaining control of governmental agencies. Corruption followed inevitably. The theory of Laissez Faire has been constantly combined with a practice of 'pork barrel' government. Sometimes a considerable measure of public benefit resulted, as in the Homestead Acts which followed the Civil War. A frequent outcome has been an inextricable mixture of idealistic and materialistic motives and results. Thus the unrestricted policy of immigration was supported in part by genuine belief in the country as a refuge for the oppressed of all nations, the land of opportunity to those who had not had a chance, and in part by a desire for factory-fodder, for cheap and docile labor. The instance illustrates the peculiar union of general social planlessness and definite planning and control within limited private areas which has characterized much of American life.

These changes that have taken place in our industrial life have brought about new problems of education. This meant that boys and girls could no longer receive most of their necessary education in the home for

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[62] William H. Kilpatrick, The Educational Frontier, pp. 48-49.

the simple reason that all the necessary materials of education were no longer there. Furthermore, industry closed its doors to the children, so they were unable to get a knowledge of the industrial process there. Furthermore, since society has become more complex it was more difficult for the child to make necessary adjustments. The fact that old customs and traditions had weakened also added a problem of social control. The church, for instance, became a less potent factor in the lives of youth.

Leaders in the field of education have often taken these social changes into account in making their plans for the curriculum. That phase of the influence of social and industrial changes will therefore be considered in the next section on the integration tendency.* In this section, however, it will be seen how the changing social and industrial conditions have caused the public to demand and bring about changes in the curriculum often regardless of the demands from the schools. Occasionally these changes have been the result of the action of special group interests. Only a few of the major effects of these forces will be considered in this section. One notable phase is the introduction of new subjects, at least partly as a result of the outside pressure.

Manual training found its way into the curriculum partly because industrial conditions prompted industrial leaders to action. Owing to the complexities of the new industrial order, conditions were not favorable to the apprenticeship system; neither were the manufacturers willing to bear

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* See Section 5, Chapter II.

the expense connected with special schools of their own.[63] They, therefore, wanted manual training courses in the high school as a means of securing the necessary trained workers without any expense on their part. The working men also favored manual training courses as a means of improving their earning capacity. Both manufacturers and laborers therefore fought for the introduction of manual training into the schools. The European manual training exhibits at the Centennial Exposition at Philadelphia in 1876, added a strong impetus to this movement which American industrial interests had started. Only a few years later the subject was introduced into the high school.* The same force was behind the introduction of commercial subjects. Tonne brings this point out in the following paragraph.[64]

> Business education in secondary schools was taken over from the private business school. The teachers, also, during the earlier stages of this development were taken over from the private business school. One or two generations ago the young man who wished to enter a business occupation found bookkeeping an ideal stepping stone. The young woman who was just beginning to find her place in business life usually found stenographic work her best means of securing a business occupation. Therefore, the secondary schools to the extent that it was planning to aid young men and women in entering business occupations, was quite justified in putting its major emphasis upon training for bookkeeping and stenographic occupations.

Vocational agriculture courses were also introduced into the high school because of industrial forces. During the Civil War, Congress in order to secure the necessary support of the West, favored the section by

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[63] Walter Albert Jessup, Social Factors Affecting Special Supervision in the Public Schools of the United States, p. 32.

[64] Herbert A. Tonne, "Business Education in Secondary Schools," Journal of Educational Survey, (May 1935), p. 529.

* See Section 6, Chapter III.

the passage of the Morrill Act which provided for the distribution of government land for the maintenance of state agricultural and mechanical colleges. This served as a precedent for other similar acts. During the World War Congress again favored the West by the passage of the Smith Hughes Act. This act provided federal aid for vocational agriculture, vocational homemaking and trade and industrial departments in high schools. As a result thousands of schools have introduced the vocational subjects.

The introduction of domestic science also came about as a result of social forces outside the school. In this case, however, humanitarian organizations deserve credit for actually carrying the idea to the schools. They recognized the fact that modern conditions of home life had released many girls from home duties and that consequently these girls were not receiving the necessary domestic training. Such societies had petitioned for domestic science in elementary schools of large cities before the Civil War. They were often successful in their attempts. In the industrial period similar organizations brought similar pressure to bear upon the high school. This work was carried further by the Kitchen Garden Association which was formed for the purpose of wider diffusion of knowledge concerning industrial training for girls. The following is a statement of its purpose.[65]

> It is the desire of its managers to carry the system into every industrial and public school. The necessity for such an education is becoming more and more apparent, as they become better acquainted with the ways of living among the poor. The teaching of the girl of today is not in the direction of household industry. Girls having gone through the public and normal schools look down upon housework as debasing and almost invariably they seek positions in

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[65] Jessup, Op. Cit., p. 56.

> stores as clerks, saleswomen, cashiers or bookkeepers. This avenue of employment is rapidly becoming overcrowded with applicants. ....It is to this work of industrial education that the Kitchen Garden Association has addressed itself, and it has adopted, as its method of work, the Kitchen Garden system.

Concerning the spread of the influence of the Kitchen Garden movement, Miss Grace Dodge wrote in 1884:[66]

> The system during these years has spread in a remarkable manner, not only in different parts of this country, but also in Europe, and other quarters of the world. There are kitchen garden groups in Chicago, Cincinnati, Cleveland, Pittsburgh, Boston, and Yonkers. The second named issues a monthly Kitchen Garden Journal with a good circulation.

The local Kitchen Garden organizations which are mentioned in the foregoing quotation yielded much pressure on the schools and finally domestic science gained a recognition in the curriculum which has proved permanent.

The science subjects attained their important place in the curriculum, to some extent, because of social conditions. This was evident, at least, during the first part of the industrial period, when state laws were passed demanding that elementary-school teachers have a knowledge of scientific fact. The effect is pointed out by Brown in the following statement:[67]

> In the seventies or thereabouts, the tendency to overload the curriculum with scientific studies was accelerated by the action of some state legislatures, requiring candidates for the teacher's certificate to pass an examination in several of the sciences.... The result was a multiplicity of informational courses.

The social subjects, although they were influenced to a great extent by other movements,* became popular partly because of social and industrial

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[66] Ibid., p. 57.

[67] Brown, Op. Cit., pp. 416-422.

* See Section 2, Chapter II.

conditions. The strong national sentiment and the realization of great opportunities in America led to a desire for courses to promote patriotism and good citizenship.[68] Such a spirit of the time even led state legislatures to make laws providing for school instruction in social studies. "Twenty-three states, during the four decades following 1860, placed upon their statute books laws requiring the teaching of history in the public schools." During the same period one-third of the legislatures enacted laws requiring the teaching of constitution.[69]

Various groups have continually attempted to influence education. Some of these groups represent business interests, others labor, and still others moral and patriotic reformers. They have carried a campaign of propaganda to further their particular interests through the schools.[70] They have worked most successfully by creating public opinion in the local communities. This in turn has reacted upon the school by making the teachers afraid to discuss controversial questions lest they lose their positions. Howard K. Beale has made the following observation to this effect.[71]

> Teachers may express views on questions that do not matter, but on anything that does affect vital interests the school must be mutual, which means that they may and inevitably do support present conditions but must not criticize nor try to improve them. In the American

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[68] Bessie Louise Pierce, Public Opinion and the Teaching of History in the United States, pp. 12-13.

[69] Ibid., p. 14.

[70] Ibid., pp. 135-298.

[71] Howard K. Beale, "Forces that Control the Schools." Atlantic Monthly, (October, 1934), pp. 603-604.

> struggle for religious liberty teachers were forced to uphold religious conformity. Schools are now free to oppose human slavery; but when slave holders were the nation's greatest property interests teachers were forced either to keep silent on that most important of public questions or else to defend the slave system--in the North evolution can be freely taught. That does not mean that the North believes in free schools. It merely means that religion has ceased to interest the group in control. The test of a free school in a Northern community is whether capitalism can be criticized, whether socialism, communism, or some other system generally considered dangerous can be supported by individual teachers who regard it as providing a 'better social order'.

Section V. The Integration Movement

Toward the end of the nineteenth century an education movement began which tried to harmonize the current educational tendencies. It is a movement which takes into consideration the psychological movement, the scientific movement, and the current social and industrial needs. The leaders of the movement conceived the meaning of education in an attempt to combine and balance the two elements of individual rights and social duties, of personal development and social service. They conceived it as the process of relating the individual to society, so as to secure both development of personality and social welfare. We notice this conception in the definition of education as given by various leaders and as summarized by Paul Monroe.[72]

> Professor James from the psychological and hence individualistic point of view, defines education as 'the organization of acquired habits of action such as will fit the individual to his physical and social environment'. President Butler's view emphasizes the

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[72] Monroe, Op. Cit., p. 406.

> sociological aspect but gives both elements. It is that education is the 'gradual adjustment of the individual to the spiritual possessions of the race'. Professor Horne's definition clearly reveals the eclectic tendency as including the psychological, the scientific, and the sociological elements in our present thought of education. This definition is as follows: 'Education is the superior adjustment of a physically and mentally developed conscious human being to his intellectual, emotional, and volitional environment'. Professor Dewey defines education as 'the process of remaking experience, giving it a more socialized value through increased individual experience, by giving the individual better control over his powers'. Here both individual and social factors are emphasized and harmonized. From whatever line of investigation is approached, its meaning is given in some terms of this harmonization of social and individual factors.

According to the spirit of this movement education is a continuous process;[73] it is growth and therefore a cumulation movement of directed activities toward a later result. It consists primarily in transmission through communication and in sharing.[74] Interest and self-activity therefore are necessary in the educative process.

This movement has expressed itself mostly through agencies in the hands of the educational profession, although the profession as a whole has not supported it wholeheartedly.

The National Educational Association has been one of the most powerful of these agencies. This association has done much of its work through committees. In 1893 its Committee of Ten began work in the direction of integration, although it recognized the theory of mental discipline and failed to recognize other ideas of this movement. H. G. Lull summarizes the work of this committee in the following statement:[75]

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[73] John Dewey, Democracy and Education, pp. 49-62.

[74] Ibid.

[75] H. G. Lull, Secondary Education, Orientation and Program, p. 70.

> The Committee of Ten of the National Educational Association (1893) unified and correlated high school studies, adapted them to the capacity of high-school pupils, eliminated much waste in instruction, and standardized high-school courses for college admission requirements. ...The report recognized the doctrine of formal discipline in its treatment of methods of instruction and in its retention of certain constants of the disciplinary core of subjects for all students. On the other hand, it applied the theory of specific disciplines by providing for the liberal election of studies. The provision for electives was also a concession to social demands. The report expressed the scientific tendency of the time in its insistence upon the completeness of treatment of the field of knowledge within each branch, upon the experimental laboratory method, and upon special methods based upon the requirements of each branch. It recognized rather half-heartedly the need of preparation for life by asserting that 'the best preparation for college is the best preparation for life'. It failed to recognize that this statement can be made valid only by first determining the best preparation for life and then by redirecting college instruction in such a way that the reversed statement would be true, 'the best preparation for life is the best preparation for college'. It apparently did not occur to the committee that college instruction was as much a part of its problems as that of the upper elementary grades. The report shows no evidence of the conception that the child in the midst of a social environment, much wider and more significant than the school, is the beginning of the big educational problem. The Committee failed to apply in a thorough-going way the doctrine of interest and the psychology of motive and self-activity; and finally, it failed to recognize the great need for training in citizenship and in the vocations.

Since the report of the Committee of Ten the National Educational Association has made more progress in the direction of integration. This is indicated by the report of the Commission on the Reorganization of Secondary Education (1913-1922). H. G. Lull also summarizes the directions that this report makes.[76]

> The preliminary statements of the Commission on the Reorganization of Secondary Education on other high-school branches are too brief to make extended comparisons with the Report of the Committee of Ten

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[76] Ibid., pp. 84-85.

possible. However, they are sufficient to show: (1) That the former exclusively preparatory aim is being rapidly broken down even in the older branches; (2) that the high schools are facing the problem of preparation for life directly, and that subjects are to be in the curriculum on this basis; (3) that the socializing of instruction, both in content and in method, is necessary to accomplish this purpose. For example, in natural science teaching it must be determined 'in what ways science instruction may contribute to the well-being and progress of the community. By selecting material for study from the industries from the town or city and acquainting the pupil with local applications of physics, chemistry, and biology the science teacher can develop interest and promote intelligence regarding community activities'.

The socializing point of view was conspicuously absent in the Report of the Committee of Ten, while it is conspicuously present in the Preliminary Report of the Commission on the Reorganization of Secondary Education. We find it in the treatment of the method and the content of the various branches, and also in the provision for the committees into which the commission is divided. Among others the following committees are provided; Committee on Social Studies; on Household Arts; on Manual Arts, on Music; on Business; and on Agriculture.

This movement has also been furthered through various curriculum studies which have been carried on by cities. Some of the results of these have been expressed in courses of study. But more important than this, however, has been the interest which these studies have awakened in professional thinking. New leaders have been developed among the classroom teachers and a new desire for the study of professional literature has become evident.[77]

Perhaps more important in furthering this movement has been the curriculum study in experimental schools. "Beginning with the work of Colonel Francis Parker at the Cook County Normal School, and the Chicago

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[77] Cubberley, Op. Cit., p. 547.

Institute (1891-1904) and the Horace Mann School (1899) at the Speyer School (1899) at Teachers College, Columbia University, a number of notable experimental schools have been established and these have made their contribution to the curriculum problem."[78] These schools have created curricula based upon child activity, creative self-expression, and spontaniety. Besides making experimentations and building curricula these schools have furthered the educational movement by the training of thousands of teachers.

Through these and other agencies the integration movement has influenced the curriculum. These effects have been summarized by Cubberley as follows:[79]

> Beginning here and there, back in the decade of the eighties, and becoming a clearly defined movement after about 1900, new courses of study and new teaching directions appeared which indicated that those responsible for the conduct of the school systems were actuated by new conceptions as to the nature and purpose of the educational process. Recognizing that the needs of society and the community were ever changing and growing, and that the needs of the pupils, both by classes and individually varied much, the courses which were then outlined came to include alternatives and options and to permit variation in the work done in different rooms and schools. The excess of drills which has characterized earlier school work came to be replaced by lessons in subjects involving expression and appreciation, such as art, music, manual work, domestic training, play, and humane education; the kindergarten and the kindergarten spirit began to effect changes in the character of the work of the receiving class and of the first grade or two of the elementary school; the discipline of the school everywhere became milder, and pupil-cooperation in self-control arose; science as an important element in modern living began to receive emphasis; subjects which prepared better for efficient participation in the work of democratic society, such as hygiene, community civics, industrial studies, and thrift, were added; the social relationship of the classroom and school were

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[78] Ibid., p. 547.

[79] Ibid., pp. 515-516.

> directed, through studies and conduct and manners, toward preparation of more socially efficient men and women; and the commercial and industrial life of the community began to be utilized to give point to the instruction in manual training, local history, civics, geography, and other related studies.

At the present time integration is a key-word in educational theory, and the spirit of the movement is outstanding in educational practice. Actual integration between subjects is a problem which is being given serious consideration. This integration may take place both by a fusion of subjects and by making separate subjects serve objectives in common. In some cases the fusion of subjects may be desirable especially within groups. For instance, geography, history, and civics courses may be fused into one subject on social relativity in which present and past social material is organized into units. Such a fusion of social subjects might even go outside the field of social studies. For instance, it is possible that communication subjects as language and grammar might contribute to the significance of these units of study. In other cases the separate subjects must continue to maintain their identity but contribute to objectives in common. To contribute to objectives in common does not mean that the different subjects should contribute to the same objectives in the same way, but in different ways. For instance, physics and social problem courses may contribute to certain citizenship objectives in common. For example, the common objectives may be to understand how the use of electricity has changed modern life. The physical course may give the child a knowledge of certain features which show how electricity has revolutionized society.

The course in social problems may contribute to the same specific

aim, not by giving the child an understanding of the mechanical features involved, but by a study of social problems and situations which have come about as a result of the use of electricity. Both of these methods of integration can be used at the same time, but must continually be adjusted to changing conditions.

CHAPTER III

EFFECTS OF THE FORCES IN THE MAKING OF THE CURRICULUM

Section I. Social Studies

At the beginning of the industrial period the social studies received very little consideration. Usually they were considered as merely incidental to the other subjects.[1] By the end of the nineteenth century, however, the average time given to social subjects in the high school was three years,[2] and since that time their importance has continued to increase.

The influence of formal mental discipline was very evident in this group of studies at least to the end of the nineteenth century but particularly during the first port of the industrial period. Before the Civil War a few history courses had been put into the curriculum because of their informational value. In Chapter I it was pointed out, however, that the informational subjects were given disciplinary value.* The result was that during the first part of the industrial period the few social study courses taught were justified by the theory of formal mental discipline and had very little material of social value. In these courses much out-of-date and socially isolated information was mastered with the hope that it might train the faculties. For instance, in the most important subject, European history,

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[1] Elmer Ellsworth Brown, The Making of our Middle Schools, p. 424.

[2] John Elbert Stout, The Development of the High School Curricula, p. 92.

* See Chapter I, page 3.

the emphasis was placed upon memorizing of dates and events most of which concerned the military and political aspects of the ancient period.[3] The same effects are noticeable in American history, although it was considered a less important subject. In this subject the emphasis was again placed upon the memorization of dates and events in connection with wars and politics. Mental discipline was also noticeable in the teaching of civics and economics, both of which were considered as relatively unimportant subjects at the beginning of the industrial period. In economics the emphasis was placed upon a mastery of principles without any practical application. "In some schools the formal study of the constitution of the United States was made before 1880, but in general this study was largely a memorizing of the constitutional clauses, and the texts were scarcely more than an analysis."[4] In spite of the changes which came about in civics courses this traditional treatment persisted several years after the end of the nineteenth century. In 1911 Sullivan wrote that texts were still in use which were dry commentaries on the clauses of the constitution, and that these texts determined the methods of instruction.[5]

The scientific movement, which emphasized the inductive method and the content of studies in the knowledge of the phenomena of nature, also had an influence upon social studies.* This movement began to influence

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[3] Henry E. Bourne, The Teaching of History and Civics., p. 59.

[4] James Sullivan, "Civics" Cyclopedia of Education, Vol. 2, p. 24.

[5] Ibid., p. 25.

* See Section 2, Chapter II.

the high-school curriculum in the late seventies and undoubtedly accounts for much of the increased emphasis that the social subjects received in the curriculum after that time. The movement, however, is also significant because of the effect that it had upon the subject matter in this group of studies. With the beginning of this movement it is noticeable that some history courses give more attention to the industrial and social life of the people. Montgomery's history text serves as an illustration of this fact.[6] In the eighties the effect of the scientific movement upon economics is noticeable because then for the first time some consideration in economics was given to application of principles.[7] In civics some slight consideration was given to the function of government and to the smaller units of government as the county, township, and city.

In the nineties, however, the champions of the scientific movement under the Herbartian influences won greater victory over the mental disciplinarians. Then took place a wholesome development of the movement which had begun in the seventies. In the nineties the social subjects were recognized as really significant, and more of the significant material to which we have just referred was added. John Elbert Stout's comment on Charles Jesse Bullock's economics text of that decade gives us some notion of the extent to which the scientific trend had influenced that subject.[8]

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[6] D. H. Montgomery, Leading Facts in American History, p. 359.

[7] Sullivan, "Economics in the Schools." Cyclopedia of Education, Vol. III, p. 391.

[8] Stout, Op. Cit., p. 189.

> The historical background dealing with the facts of Economic History and the illustration of principles by frequent allusions to American experience, marks the complete transition from the formal and theoretical to the concrete and scientific method of treatment. The emphasis which the author places upon money and credit, and also his concrete method of treatment, indicate clearly the interest manifested in the free silver issue of that time. His treatment of monopolies, socialism, the economic function of government, and the like, further illustrate the practical point of view and the changes which had taken place in the subject matter of political economy.

Eggleston's text in American history serves as another illustration of the addition of socially significant material in well illustrated form in the nineties. The content of his text-book justifies the following point of view which he set forth in the preface of the book.[9]

> The 'proper knowledge of mankind is man', and the real importance of history lies in the light that it throws upon humanity. For this reason liberal attention has been here given to the domestic and social life of the people, their dress, their food, their modes of thought and feeling, and their ways of making a livelihood. The succession of events in minor wars would only weary the attention but the modes of attack and defense and the character of the arms of the various belligerents are essential facts in the history of man in this New World. And the story of the progress of civilization, as marked by the introduction of new inventions and by changes in modes of living, is of primary importance in any history written in the modern spirit.

McCleary's civics text illustrates the same thing in that subject.[10] It places the emphasis upon the function of government, and gives consideration not only to national government but state and local government as well.

In the nineties the school of Herbartians also began to have an influence upon the social studies. In Chapter II it was seen that the

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[9] Edward Eggleston, A History of the United States and its People, (preface).

[10] James T. McCleary, Studies in Civics, 369 pp.

Herbartians became influential in the nineties and that among other things they emphasized the social point of view in the teaching of history.* For that reason they too must be given credit for the change to the social point of view that we notice in the social studies courses beginning in the nineties. Another and more specifically characteristic contribution along this line that the Herbartians made to the teaching of social studies was the introduction of "type studies" to replace the teaching of hundreds of isolated facts. For example, in history such "type studies" were introduced as the internal development of our nation, the development of the West, the growth of political parties, the rise of slavery, and the evolution of transportation.[11]

Social and industrial conditions of the country also have had an influence upon the social subjects. In Chapter II it was pointed out that the strong national sentiment led legislatures to make laws providing for school instruction in social studies.** The effect of the pressure due to various group interests is also noticeable. For instance, Melville J. Herskovitz points out that the Hughes' text in Citizenship carries illustrations printed "by the courtesy of such corporations as Carnegie Steel Company, the International Harvester Company, and the Baltimore and Ohio Railroad Company."[12] These pictures according to Herskovitz are "not

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[11] Ellwood P. Cubberley, Public Education in the United States, p. 541.

[12] Melville J. Herskovitz, "What Your Child Learns" Nation, Vol. 119, (Sept. 17, 1924), pp. 282-284.

* See Section 3, Chapter II.

** See Section 4, Chapter II.

pictures of blast furnaces with sweating men but pictures of Americanization Schools--factory gardens--model factory buildings--and a group of twenty-four elderly men, who having labored for thirty-five years each in the Carnegie Steel Company are posed at the annual picnic given to the employees as a reward for services rendered."

In the present century, especially in the recent years, the influence of the integration movement is noticeable. In Chapter II the point was made that this movement recognizes the forces found in the scientific, psychological, and industrial movements.* Furthermore it was pointed out that the leaders of this movement conceived education as a process whereby the individual is related to society through interest. If one looks for actual fusion of subjects as a present result of this movement, he will be disappointed because "reports from the field indicate that in social studies programs each of the social studies is still taught separately, with some attention to correlation, but without real fusion."[13] The whole force of integration, however, is at work, and the spirit of it prevails throughout the field of social subjects. Some school systems recognize the social subjects through both elementary and secondary grades. They recognize that social subjects should depict the social group and deal with the acts, opinions, and characteristics of individuals, primarily for the purpose of illustration and of explaining group conditions or activities. They begin with the study of social groups in the lower grades. In such

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[13] Henry Johnson, An Introduction to the History of the Social Sciences, p. 117.

* See Section 5, Chapter II.

systems the high schools continue this work by a use of materials drawn from social and industrial life of both past and present. This becomes part of a process and grows in interest for the child and is made significant to him. Such tendency has been present in some teacher training schools for a number of years, and it now prevails in some of our better schools. Some texts, as those by Rugg and Shumaker, are written with this view in mind. The trend is recognized by some in the use of current event materials. For instance, the publications of the Civic Education Service edited by Walter Meyers are dominated by this philosophy. The conclusions and recommendations of the Commission on the Social Studies indicates the effect of the integration movement upon method. According to this report the good teacher will do as follows:[14]

> 1. . . .will hold in mind the broad purpose of American education and will see clearly the special responsibilities of the social sciences in leading boys and girls to a fuller understanding of and a more effective participation in the complex and dynamic social world of material things, persons, institutions, conflicts, thought, ideals, and aspirations.
>
> 2. . . .will adjust his instruction to the experience and ability of the pupil in order that the knowledge, powers, and loyalties acquired will be useful and related to the world in which the pupil actually lives and thinks and acts. . . ."
>
> 3. . . .will supplement the textbook, which will doubtless play an important role in social science instruction for many years, by an abundance of collateral reading, by books, newspapers, and magazines, by maps, photographs, charts, models, motion pictures, museums, and materials for constructive activities, and by carefully organized journeys, excursions, and, if possible, in more distant regions.

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[14] Conclusions and Recommendations of the Report of the Commissions on the Social Studies, 1934, pp. 77-84.

4. . . .will encourage the pupil to make imaginary journeys, draw imaginary pictures and diagrams, write imaginary letters, diaries and autobiographies, engage in imaginary debates and participate in various forms of dramatization.

5. . . .will seek to integrate his specialty with the work of his colleagues in the social sciences and with the total school curriculum--with instruction in literature, language, mathematics, natural science, and the arts.

6. . . .will make full use of the class group--its personalities, its differences in talent, its varied experiences, its conflicts of interests, its collective life; will relate his work as far as possible, to the organized life of the school as manifested in social activities, student groupings, and the school government; and will regard the surrounding community as his social laboratory.

7. . . .will relate the educative process to the interests of the pupil, not because of any romantic faith in child nature or of any equally romantic distrust of adult society, but rather because learning, in order to be vital, must enlist the active and sustained interest of the learner.

8. . . .will appeal as little as possible to those motives which tend to exacerbate the struggle between individuals and will encourage the fullest development of the social and creative impulses.

9. . . .will adjust his instruction within the class group to individual differences, will respect divergences of personality, and will stimulate the growth of all socially desirable abilities.

10. . . .being familiar with the various material aids of instruction, already mentioned, and with diverse teaching devices, such as the question, the discussion, the individual report of the group project, will employ them rationally in the achievement of purpose, knowing the value of each but being bound by none.

11. . . .will make provision for indispensable drill and repetition, and will prepare and administer tests of progress from time to time; but in all he will appraise with appropriate humility the adequacy of his own judgments and of any classroom examinations to measure the long-time social results of instruction.

12. . . .will strive continuously to develop in the child habits of independent study, inquiry, thought, and action and thus free him as quickly and completely as possible from reliance upon the formal and authoritarian tutelage of teacher, school, and elders. In particular he will endeavor to acquaint the pupil with diverse ideas and points of view and cultivate in him a reasoned scepticism regarding the claims advanced in support of any social doctrine or program.

It can be seen, therefore, that the theory of social-studies teaching has been greatly influenced by the integration movement. One of the greatest problems now in this field is the training of teachers who will become capable of putting these theories into practice.

Section II. English

English has been considered as an important subject throughout the industrial period. The average high school devoted considerable time, about one and one-half years, to its study at the beginning of the industrial period,[15] and much more, over three years, since the beginning of the nineteenth century.[16]

At the outset of the period English teaching was dominated by formal mental discipline. The aim of English instruction at that time was to give the pupil an understanding of the syntactical laws of the language and skill in the logical analysis of sentences and phrases.[17] This is illustrated by the fact that the most of the time was given to the study of formal grammar. Grammar was a text-book study and most of the texts consisted of definitions, rules, and material for analysis and parsing.[18] Consequently most attention was given to memorizing definitions, rules,

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[15] Stout, Op. Cit., p. 101.

[16] The Teaching of English in the Large Cities of the United States, City Association of Teachers, New York, pp. 11-20.

[17] George R. Carpenter, Franklin T. Baker, and Fred Scott, The Teaching of English in the Elementary and Secondary Schools, p. 189.

[18] Stout, Op. Cit., p. 124.

declensions, conjugations, and much formal word parsing. The text by Reed and Kellogg illustrates this type of arrangement.[19] Another is that by Greene. He makes the statement of this aim in the preface to one of his grammar texts.[20]

> As a sentence is the expression of a thought and as the elements of a sentence are expressions for the elements of thought, the pupil who is taught to separate a sentence into its elements is learning to analyze thought and consequently to think.

In the study of rhetoric the emphasis was placed upon the forms of discourse, figures of speech, and niceties of expression, rather than upon the thought.

The English subjects were also affected by the scientific movement which was characterized by the emphasis that it placed upon socially significant material.* Some of the effects of this movement upon English were good; others were bad. Some slight changes came about in grammar and rhetoric. Lull points out the fact that Swinton's Language and Grammar Series of 1874, for instance, retained the old order of definition before used, but on the other hand, also adopted a principle of definition for use.[21] The same principle is followed in Carpenter's text of 1898[22] and Frank's text of 1911.[23] In rhetoric the effect of the scientific movement

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[19] Alonzo R. Reed and Brainerd Kellogg, Lessons in English, 297 pp.

[20] Samuel S. Greene, An Analysis of the English Language, (preface).

[21] H. G. Lull, Inherited Tendencies in Secondary Instruction in the United States, p. 213.

[22] G. R. Carpenter, Principles of English Grammar, 259 pp.

[23] Maude M. Frank, High School Exercises in Grammar, 198 pp.

* See Section 2, Chapter II.

is noticeable in the attempt to make rhetoric function in connection with correct use of English.[24] Hall's rhetoric text attempted to accomplish this aim by giving much space to examples of correct and incorrect rhetorical forms.[25] Here, however, the real emphasis is still upon composition for rhetoric.

One of the most notable effects of the scientific movement upon English was the tendency to shift the emphasis from some subjects within the group to others. Grammar, for instance, declined in importance as a subject soon after the beginning of the industrial period and by 1890 was relatively unimportant.[26] Another very outstanding change is the shift from rhetoric to composition. Sometime in the eighties many of the high schools acknowledged that composition was a valuable subject because of the fact that the success of every person is dependent upon his ability to express his ideas effectively.[27] In other words, they recognized that the thing desired was not a knowledge of rhetoric but the effect of rhetoric.

The influence of the scientific movement is also noticeable in the effect that it had upon literature. In the last few decades of the nineteenth century literature became an important subject.[28] Instruction in the subject of literature gave the high school a rich field of subject

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[24] G. R. Carpenter, F. T. Baker, and F. Scott, Teaching of English Composition in Elementary and Secondary Schools, p. 218.

[25] Adams Sherman Hall, The Foundations of Rhetoric, 337 pp.

[26] Stout, Op. Cit., p. 99.

[27] F. T. Baker, "Composition" Cyclopedia of Education, Vol. II, p. 66.

[28] Stout, Op. Cit., p. 102.

matter. Much of the wealth in this field was not immediately accepted by the high school. Sometimes it seems that even progressive forces became stereotyped. This is what happened in high-school literature, when literature was studied by an analytical, "word by word," method, and therefore the unity of its content was lost. In many other cases much of the time was given to a study of unimportant and forgotten authors and only slight attention to a study of literature itself.[29] Pancost's text in English literature is an illustration of such a point of view.[30] In this book he gives the historic setting of English masterpieces and a short biography of the authors, but very little of their literature. Even Halleck's texts which in some cases are still in use today were built upon the same principle.[31]

Beginning in the nineties the influence of the Herbartian movement is noticeable particularly in the teaching of literature. Since that time the emphasis has shifted from an analytic study of literature and the life of writers to an extensive study of classics and other literature.[32] Students have been permitted to choose classics from lists of recognized authors for their reading. The tendency to coordinate literature and composition, which was noticeable in the nineties and for a few years after the turn of the century, evidently was due to Herbartian influence. This

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[29] James F. Hosic, Reorganization of English in Secondary Schools, p. 21.

[30] Henry S. Pancost, An Introduction to English Literature, 413 pp.

[31] Ruben Post Halleck, History of English Literature, 647 pp.

[32] George P. Krapp, Teaching of English Literature in the Elementary and Secondary Schools" Cyclopedia of Education, Vol. 14, p. 49.

particular coordination movement, however, did not recognize pupil interest sufficiently and soon died out.[33]

The effect of the modern integration movement has been noticeable in the teaching of English especially since the turn of the century. In Chapter II it was pointed out that this is an educational movement which takes into consideration some of the scientific, psychological and industrial forces.* This movement has helped to bring about a further development of some of the more progressive reforms which were started as a result of the scientific and psychological movements of the nineteenth century. For instance, the integrationists have continued to emphasize literature and composition rather than formal grammar and rhetoric. The same can be said for the idea of an extensive study of literature which was introduced by the Herbartians. The integration movement, however, has gone much farther than that. Among other things it has recognized pupil interests, individual differences, and proper adjustment to one's environment. From one of F. T. Baker's articles on teaching composition, we gather that the forces of the integration movement are apparent in the teaching of twentieth century composition.[34]

> Especially noteworthy are the changes in the methods of education. Theory has given way to practice; it is fully realized that one can learn to read and write only by speaking and writing under stimulus and guidance. Rhetorical rules are worth nothing except as applied.

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[33] Lela Olson Lehman, A Study of the Changing Trends in the Teaching of Literature in the Secondary Schools of the State of Kansas, p. 70.

[34] Baker, Op. Cit., Cyclopedia of Education, Vol. II, p. 166.

* See Section 5, Chapter II.

> The earlier teaching aimed at sort of lifeless accuracy. Verbal and grammatical correctness, propriety in spelling, and punctuation were sufficient. The present-day teaching of the better sort judges the child's efforts not only for these things, but for the interest and general effectiveness of the whole composition. Has he done with the subject what he should have been expected to do. Does his composition show that he has remembered and thought; that he has ordered and arranged? Such is the standard now set up, adopted though it must be to the child's age and capacity. In accordance with these standards the training is not in the lesser units of words and sentences so much as in paragraphs and whole compositions.
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> Through the influence of modern linguistic scholarship another influence is slowly working its way into the schools. Under the older (and erroneous) conception of language as a fixed and absolute thing, teachers often set up a rigid standard of grammatical and rhetorical propriety that could be justified, either from literature or from the speech of a large body of educated people. This standard, under which most teachers of the present day were educated, is slowly giving way before the conviction that a considerable latitude must be allowed in the choice of words and expressions; a conviction that it is often impossible to say, as between two expressions that one is right and the other wrong.
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> More and more the tendency is to have the pupils write of the familiar and concrete, of the things within his own daily experience, instead of the abstract and remote. It is realized that he can learn to write and speak best when dealing with simple and familiar things. Such material commonly includes also his school work in other subjects than English. Themes drawn from his readings in literature may well be included, but must be chosen with careful reference to the limitations to children's minds.

Evidences of the integration movement are also noticeable in the tendency to stress appreciation in literature. This idea was expressed by Boas and Smith in their text entitled An Introduction to the Study of Literature, when they said:[35]

> Progressive teachers have come to believe that literature ought to be taught as literature, the revelation in artistic form of the author's vision expressed in prose or poetry, lyric or epic, drama

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[35] Ralph Philip Boas and Edwin Smith, An Introduction to the Study of Literature, p. v.

> or essay, novel or satire. When students leave school they do not read bits of English literature or 'classics' with notes and introductions. What they need for an understanding of literature, an appreciation of literature, an impulse toward good literature, is a knowledge of the literary forms as they will meet them outside the classroom. An interest in the history of literature, in the biographies of authors, and the other impediments of scholarship is indispensable to the scholar, but of secondary importance to the man or woman who reads for what is commonly called the pleasure of reading.

To some degree actual integration has taken place within the group of English subjects. Brubakers and Snyder's English text which was produced as early as 1910 was one of the attempts at integration. John Elbert Stout has given us the following quotation from the preface to this book.[36]

> The purpose of this book was to unify the teaching of English in the High School. English is more than grammar, more than composition, more than literature. . . . .
>
> High school English is here considered a unit. During the secondary school period the pupil should become familiar with the structure of the English language by the study of uncontroverted rules of usage embodied in grammar; he should acquire the habitual use of forceful and appropriate language in speaking and writing by the practice of oral and written self expression, he should form a discriminating taste for good literature by much reading, together with profitable discussion regarding the form and content of the literature read. This volume seeks to be a guide in such work.

This tendency toward integration and a recognition of child interest and social demand is still growing. The following quotation from Lyman indicates that the integration movement is exerting a powerful influence upon aims and methods of present-day English teaching.[37]

> I submit, then, that every new curriculum may be appraised by two well-established trends, recently innovations:

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[36] Stout. Op. Cit., p. 231.

1. Is extensive reading richly supplementing the intensive study of a few classics?
2. Do the basal composition units consist of the forms of communication used in daily life?

I submit that, still in the experimental stage, there is a third innovation:

3. Is the curriculum moving toward a limited language and grammar program?

And finally in the offing--as yet decidedly in the trial and error stage--is the fourth innovation:

4. Is there an attempt to articulate literature at least with related arts, and possibly with other content subjects?

In conclusion it can be said that in recent years the outstanding aims of English instruction have been a working knowledge of English, the power of self expression and an appreciation for and a reading knowledge of English. These aims are good, but the progressive teacher must continually change and shift materials in recognition of pupil interest in a significant and changing world.

Section III. Science

Science subjects have been given a relatively important place in the high-school curriculum. Throughout the industrial period the average time devoted to this group of subjects has seldom been less than three years.[38] Unlike most other groups of study, science has consisted of a large number of subjects--physics, chemistry, botany, zoology, geology,

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[37] R.L. Lyman, "Traditions and Innovations in the Senior High School Curriculum," The English Journal, March 1935, pp. 189-195.

[38] Stout, Op. Cit., p. 147.

physiology, physical geography, and biology. In most schools geology lost its place to physical geography by the end of the nineteenth century, and after that time neither subject has been given much of a place in the curriculum. Most schools tended to give more time to the biological sciences and physics toward the end of the nineteenth century than before,[39] and to general science in the present century. Seemingly a larger number of forces enter into the making of the science courses than in any other.

In many respects the nineteenth century science courses were largely informational subjects. In Chapter II it was pointed out that when the industrial period began, sciences had been introduced into the secondary schools in order to give students practical knowledge, and that after the Civil War state laws demanded that elementary-school teachers have a knowledge of facts.* The result of this was that in many cases knowledge for its own sake became an aim in science teaching.[40] This is noticeable in all sciences, but especially in the biological subjects. For many years all of them were short-time subjects which attempted to give the pupils formal knowledge necessary to pass tests. In biology, for instance, the pupils were required to memorize facts concerning the various types of animal life. Most of these facts concerned the physical characteristics of animals and were concerned very little with their habits of life.[41] The

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[39] Ibid., p. 147.

[40] Elmer Ellsworth Brown, The Making of our Middle Schools, pp. 416-422.

[41] J. Dorman Steele, J. W. P. Jenks, Popular Zoology, 319 pp.

* See Section 4, Chapter II.

subject of physiology serves as another example. According to M. A. Biglow physiology was only a formal study of anatomy. He says:[42]

> The term physiology was loosely used and applied to various courses of study of the human body, some of them based upon texts with less than ten per cent of their pages devoted to physiological topics.

The informational aim is also apparent in the so-called earth sciences. Physical geography was influenced largely by this force. The same is true of geology, although it declined in importance as a subject soon after the beginning of this period. In these subjects the memorization of geologic and physiographic fact was often emphasized.[43] We notice the evidence of the informational point of view in physics and chemistry, although they were full-year subjects. More practical information, however, was taught in these branches. In the first part of the industrial period physics was taught under the name of natural philosophy. In this study the materials often consisted of descriptions of machines, daily experiences and familiar processes.[44]

The sciences were also controlled by formal mental discipline, because as has been pointed out in the introduction, the informational subjects were accepted as mental-discipline subjects as soon as they were given clear mechanical structure. Most of the materials, which we have described as satisfying the knowledge aim, came to satisfy the aim of formal

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[42] M. A. Biglow, "Physiology" Cyclopedia of Education, Vol. IV. p. 716.

[43] Stout, Op. Cit., p. 170.

[44] C. R. Man, "Physics, Historical Development" Cyclopedia of Education, Vol. 14, p. 713.

mental discipline. Another strong evidence of the influence of formal mental discipline is the tendency to emphasize classification of materials. This is noticed in the end of the nineteenth century, especially in the biological subjects. For instance, in Asa Gray's botany text, one of the few texts in use until 1895, the emphasis is placed upon the classification of the external characteristics of plants and flowers. The author even makes the statement that the purpose of the book is to teach the principles of the structure of plants and the nature and names of their parts.[45] A. S. Packard's zoology is another example of a text which gives extensive classifications.[46] Even Steele's Popular Zoology gives extensive and minute classifications, although it is well illustrated and gives some information for practical use. This is no accident, but an aim of the authors as they point out in the following paragraph from the preface to this book:[47]

> The limits of the book compel a selection to be made from the numberless animal forms. Every class however, is named, with most of its orders and many of its principal genera, each one illustrated by a cut and description of a typical species. Tables for classification and vertebrate precede, in general, every division. These will enable the pupil to refer any animal to its order, and in many instances, to its genus; though it should be borne in mind that the characteristics given are applicable to the genera and species described in the text, and not necessarily to all belonging to the order. In addition to those analyses a tabular view of all the animals treated is inserted in the appendix.

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[45] Asa Gra, How Plants Grow, (Preface).

[46] A. S. Packard, First Lessons in Zoology, 389 pp.

[47] J. Dorman Steele and J. W. P. Jenks, Popular Zoology, (Preface).

It is also noticeable that formal discipline had been affected by the Pestalozzian idea that other faculties than memory and reason can be trained. One of the claims for the biological sciences, for instance, was that it would give training in how to observe. This is illustrated by the following paragraph from the preface to A. S. Packard's zoology.[48]

> To become in any way disciplinary the student should be required to regularly observe, compare, dissect, draw, and write out descriptions of the specimens for dissections, thus becoming an original observer and recorder.

Religion had a more noticeable effect upon science courses than it did upon any other subjects. The effect is small and was least in the biological subjects and here only in the first two decades of this period. The following is an example of one of the occasional paragraphs with a religious color from Gray's botany text.[49]

> In order that the vegetable creation might be adapted to every soil, situation, and climate, and to the different ones of the greatest variety of animals as well as to the many peculiar needs of mankind, God created plants in a vast number of kinds and orders that these should be perpetuated and kept distinct. He ordained that each should yield seed and fruit 'after its kind'. So each sort of plant multiplies and perpetuates itself from generation to generation.

As one would expect, the scientific movement had an effect upon science teaching. In Chapter II it was seen that this movement emphasized the inductive method and the content of studies in the knowledge of the phenomena of nature.* In its beginning it is noticeable more in the physical sciences than in the others. In the first place the scientific movement

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[48] Packard, Op. Cit.

[49] Gray, Op. Cit.

* See Section 2, Chapter II.

increased their prestige.[50] It also had a wholesome effect upon the content of their subject matter. Lull says that "Steele's Fourteen Weeks in Natural Philosophy would certainly have been inadequate for present needs but through the simplicity of its descriptions, its popular illustrations, its suggestions of something more, it was superior to present texts in stimulating enthusiasm in the subject."[51] Woodhull has pointed out the same tendency at the time when the scientific movement began to take effect. He makes the following statement:[52]

> The kind of physics which was taught during the first period is well represented in the earlier editions of Gage's and Avery's textbooks. It was descriptive of matter of universal interest and abundantly illustrated by experiments exceedingly well adapted to make the subject real.

Some progress was also made in the biological sciences with the introduction of the scientific movement. At first a tendency to shift from the idea of mere classifications to a minute study of plant and animal structures by use of the microscope is noticeable. Later a shift took place from the study of structures to a study of the actual functioning of organisms.

In the early eighties the scientific movement also led to the establishment of the laboratory method of study. This method was used especially in the physical sciences and to some extent in biology. The possibilities of this method were great because in this way the pupil could

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[50] H. G. Lull, Inherited Tendencies in Secondary Instruction in the United States, p. 226.

[51] Ibid., p. 221.

[52] John Woodhull, The Teaching of Science, p. 25.

make experimentation and observations for themselves. The outcome, however, was not entirely satisfactory because the method often became formal and also crowded out valuable content thus losing its educational value. Stout has compiled a number of quotations collected by Woodhull illustrating the formality which prevailed in the laboratory method near the end of the century.[53]

> Chemistry has suffered from the irrepressible wave of laboratory madness which has swept over the whole educational world. --Nothing too severe can be said against the mechanical and demoralizing system of notebooks with operations, observations, and inference headings. --They are wholesale breeders of dishonest and superficial work. --A few years ago it seemed necessary to urge upon teachers the adoption of the laboratory method to illustrate the textbook, in not a few instances it would now seem almost necessary to urge the use of the textbook to render intelligible the chaotic work of the laboratory. --Physics in too many of our schools ranks as a most difficult subject--An elementary presentation of physics should begin by resuming what might be called the experience of the average lad of sixteen years. The demand therefore is not so much for new facts, or for sheer facts of any kind, as for an orderly arrangement and an ability to use these facts.

Thus near the end of the century a reaction to formal science teaching is noticeable. One outcome of this reaction was a decrease in the number of students taking these science courses. Some such science teaching, however, still prevails.

After the turn of the century the effects of the integration movement are noticeable. In Chapter II the point was made that this movement recognized the forces found in the scientific, psychological, and industrial movements.* Furthermore the point was made that the leaders of this movement

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[53] Stout, Op. Cit., p. 165.

* See Section 5, Chapter II.

conceived education as a process whereby the individual is related to society through interest. A significant effect upon science courses was the creation of general science courses. In these courses the attempt was made to emphasize the content value of subject matter rather than training in scientific method. The result of this trend has not displaced the separate sciences, for within their fields they are becoming flexible and richer in subject matter. Thus only one step toward integration has taken place. Downing says:[54]

> Now we have a series of largely independent science subjects presented at various grade levels--nature study, hygiene, general science, biology, chemistry, physics, etc.--but no real course in science. Usually the topics to be treated in these several subjects are selected by those interested in that one level of instruction. They often disregard or know little about what has gone before or what is to follow.

On the other hand the integration movement has had a great influence upon the theory of science instruction. Downing again says:[55]

> The curriculum in science should be stated in terms of the things to be accomplished, not in the subject matter to be studied. This means for a particular grade the course of study in science would list (a) the habits, probably largely health habits to be established; (b) a few principles of science to be mastered, not merely so they can be stated but so they can be applied to the solution of problematic situations of the sort that arise in the life of the pupil; (c) some of the important emotionalized standards to be acquired; (d) some of the elements and safeguards of scientific thinking skill in the use of which is to be here achieved; (e) some concept to be clarified which will not only be immediately satisfying to the pupil's curiosity, but concept that will serve as a basis for understanding principles, emotionalized standards, or skills in thinking to be introduced at later levels of the course.

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[54] Elliot Rowland Downing, An Introduction to the Teaching of Science, p. 99.

[55] Ibid., pp. 97-98.

> In connection with each of these specific objectives of the instruction, subject matter might be suggested that lends itself to such purposes. Thus under a given principle could be listed (1) those two or three demonstrations that have been found by previous experience to be serviceable in giving pupils a ready understanding of the principle, (2) references to selections from textbooks or other reading materials that present the matter with exceptional lucidity, (3) a number of problematic situations that may be used to give pupils drill in the application of the principle, (4) illuminating historical instances, illustrative of the steps in the discovery of the principle or of its application in research or invention.

If the foregoing suggestions are carried out by the future science teacher, science will find a more significant place in the life of the child. Such courses will be adjusted to pupil ability, interest, and social needs. They, however, must be planned as a whole to have functional continuity.

Section 4. Mathematics

Mathematics has been considered as an important subject throughout the industrial period. The average time devoted to it, at least until the bend of the century was as much as three years.[56] During this period the three outstanding mathematical subjects were algebra, geometry, and arithmetic because in the early part of the century the other mathematical subjects such as trigonometry, analysis, calculus, surveying, navigation, and engineering were removed from the curriculum and no new subjects were added.

Formal mental discipline was strong in mathematics. Throughout most

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[56] Stout, Op. Cit., p. 100.

of the period very little change is noticeable in algebra texts.[57] Their material was very abstract for the high-school pupil and therefore it found very little justification outside formal mental discipline. Geometry also was taught largely as a mental discipline subject. In 1911 Smith made the statement that geometry is not studied, and never has been studied, because of its possible utility in commercial life or even in the workshop.[58] On the other hand he says that geometry offers the best developed application of logic that we have in the school courses. He continues along this line of thought by saying that the man who has studied geometry has acquired habits in reasoning that will help him in every line of work. This claim is given for geometry even today. In a recent article Vera Sanford says that if geometry is taught right the end product is increased facility in reasoning and in judging reasoning in other fields.[59] Arithmetic has also been taught largely for its disciplinary value until recent times. Concerning it Smith made the following statement in 1900.[60]

> Arithmetic may, even by obsolete problems, train the mind of the child logically to attack the everyday problems of life.

The influence of social and industrial forces is noticeable also in mathematics. Ever since the beginning of the industrial period the fact that the high school was a tax-supported free public school had its influence

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[57] Ibid., pp. 121-229.

[58] David Eugene Smith, The Teaching of Geometry, p. 17.

[59] Vera Sanford, "Why Teach Geometry?" The Mathematics Teacher, May 1935, pp. 290-296.

[60] David Eugene Smith, The Teaching of Elementary Mathematics, p. 26.

upon mathematics instruction. Smith says:[61]

> In America it is not alone the boy who is interested in education in general, or in mathematics in particular who studies geometry and who joins with others of like tastes in this pursuit, but it is often the boy and the girl who are not compelled to go out and work, and who fill the years of youth with a not over strenuous school life. It is therefore clear that we cannot hold the interest of such pupils by the study of Euclid alone. Geometry must, for them, be less formal than it was half a century ago.

One of the early effects of this mass education is noticeable in the tendency to simplify and illustrate. Of course, part of this tendency in the early years may have been due to the Pestalozzian movement and in later years to more modern educational psychology. Smith has the following to say concerning the progress which was made in simplifying and illustrating geometry textbooks.[62]

> The early text book in geometry contained only the propositions, with the proofs in full, preceded by lists of definitions and assumptions (axioms and postulates). There were no exercises, and the proofs were given in essay form. Then came treatises with exercises, these exercises being grouped at the close of the respective books. The next step was to the unit page, arranged in steps to aid the eye, one step to a page whenever that was possible. ...In this respect the Wentworth geometry was a pioneer in America, and so successful was the effort that this type of page has been adopted as far as the various writers were able to adopt it, in all successful geometries that have appeared of late years in this country. As a result, the American textbooks on this subject are more helpful and pleasing to the eye than those found elsewhere.

Social and industrial conditions have had a direct effect upon arithmetic because business conditions demanded a study of commercial arithmetic. In

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[61] Smith, Op. Cit., p. 70.

[62] Ibid., pp. 72-73.

the last quarter of the nineteenth century a few practical problems were incorporated into arithmetic texts. For instance, Meyers' text has a few practical problems dealing with simple machines.[63] Some even earlier than Meyers' text have practical problems dealing with business transactions.[64] After 1890 and especially since 1910 the great demand for practical problems in arithmetic led to the introduction of courses in commercial arithmetic, where such questions as banking, investments, bookkeeping, and commissions were treated.[65]

The influence of the integration movement which recognizes scientific, psychological, and industrial factors is quite noticeable in twentieth century mathematics teaching. Especially psychology has made useful contributions.[66] Breslich has summarized some results of the movement in the following paragraph.[67]

> The subject has made many valuable contributions by participating in general educational movements of national scope. It has rendered valuable assistance to the teaching movement by producing mathematical achievement tests, mathematical ability tests, diagnostic tests, and prognostic tests. With the coming of the junior high school, serious attention has been given to the construction of new courses and textbooks to be used in the new institution. Techniques of supervised study and individual instruction to supplement group teaching have been worked out more successfully in the field of mathematics than in most others.

Another notable fact is the slight tendency toward integration of subjects within the mathematics group. When the movement began it had more of the

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[63] George W. Meyers, First Year Mathematics for Secondary Schools, 181 pp.

[64] Stout, Op. Cit., p. 120.

[65] Ibid., pp. 228-229.

[66] Ernest R. Breslich, The Administrations of Mathematics in Secondary Schools, pp. 90-126.

[67] Ibid., p. 382.

marks of mere simplication than of integration. For instance, texts were introduced which included material from the different branches of mathematics in simplified form. Meyers' text in high-school mathematics is an example of this. It includes arithmetic, algebra and geometry. The author says that he stresses not rules but the thought value of the work. The major emphasis, however, was placed upon algebra.[68] Another example of unified mathematics is the series of texts by Breslich.[69] His later editions show a greater tendency toward integration than the series just referred to. This series recognizes the social realities of materials. It recognizes that these materials must fill a real life need of the pupil. According to the author these texts are organized in pedagogical units rather than in logical units, and are adapted to the abilities of the pupils. The text, however, leaves to the teacher much of the problem of arranging material around one central core. What has been said should not be taken to mean that the movement of correlation of mathematics has made great progress. Breslich bears this out in the following statement.[70]

> It seems that the movement of correlation has not developed as rapidly as should be expected. The reason is that certain factors operate heavily against its progress. Teachers are naturally introducing innovations. Some are afraid that the combination of several subjects might increase rather than diminish the complexity and that it will introduce additional difficulties in teaching and learning. Others admit that there are many points of contact but insist that there are phases which make correlation unnatural and detrimental.

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[68] Meyers, Op. Cit.

[69] Ernest R. Breslich, Junior Mathematics; Second Year Mathematics; Third Year Mathematics, 351 pp.

[70] Ernest R. Breslich, The Administration of Mathematics in Secondary Schools, pp. 397-398.

> Still others fear that the subjects of algebra and geometry will lose their individualities which might endanger the cultural values of mathematics. Finally, many teachers believe that thoroughness is best attained if each subject is studied intensely for a long period of time to the exclusion of others.
>
> Thus the unification of the mathematical subjects is being questioned. However, the measured results that are available seem to favor the plan. In general, the investigations that have been made establish the facts that the results obtained with combined courses are at least as good as those obtained with the separate courses when measured with tests in algebra and geometry. However, when mathematical power tests are used, as for example, tests in ability to use and apply mathematics and tests of functional thinking, the result obtained with the combined courses indicates superiority.

Today the integration movement can easily be identified with educational theory concerning mathematics. The best method recognizes the fact that mathematics should be used as a means of bringing the child into a proper relationship with society. This theory finds room for much expression because of the fact that mathematics is a means of communication. Such a method gives increased attention to the child and to the quantitative aspects of what we call the content subjects--that is, those fields of knowledge which deal directly with the natural and the social environment.[71]

Section V. Foreign Languages

Much time has been given to foreign languages throughout the industrial period. In this field by far the greatest emphasis has been placed upon Latin. In 1912 it was estimated that Latin occupied one-fifth

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[71] P. E. Hutson, "The Need for Reorientation of Mathematics in the Secondary Schools," The Mathematics Teacher, (March 1935), pp. 145-153.

of the time of the high school.[72] In the present century modern languages as French, German, and Spanish are taking some of the time formerly given to Latin.

The foreign languages have been controlled by the theory of formal mental discipline perhaps as much as any other subject. Its persistence is shown by the fact that very few changes have occured in subject matter and method of teaching until recent years. The grammar translation method of teaching prevailed until very recently, practically without exception.

In Latin, the first year text is the only one which gave much opportunity for variation because the first year book was invariably followed by Caesar, and this usually by Cicero and Virgil in the order named. Even the characteristics of the first year course have not changed much. The first year Latin books consisted chiefly of grammar and exercises for use in drill.[73] Allen and Greenough's Latin Grammar is an example of such a text.[74] Smith's Latin text of 1920 is another such example.[75]

That this traditional procedure continued to affect the teaching of Latin in the present century is pointed out in the following paragraph from the Report of the Commission on the Reorganization of Secondary Education:[76]

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[72] Gonzaley Lodge, "Latin, Teaching of" Cyclopedia of Education, Vol. 3, p. 645.

[73] C. H. Handschen, "Methods of Teaching Modern Languages" United States Bureau of Education Bulletin, 1913, No. 3, pp. 94-103.

[74] J. H. Allen and James B. Greenough, New Latin Grammar.

[75] M. L. Smith, Elementary Latin, 330 pp.

[76] Preliminary Report of the Commission on the Reorganization of Secondary Education, Bulletin of the United States Bureau of Education, 1913, No. 41, p. 39.

> Speaking broadly, in shaping our courses in Latin in secondary schools, we have approached our problems with college entrance requirements and the interests of Latin chiefly in mind. Some of the tenderest-hearted of our guild have padded and smoothed the Procrustean bed a little here and a little there, but it is the same old bed upon which we force our victims to lie. If the subjects of our ministrations writhe and groan, we take their sufferings as evidences that our methods are effective, fortifying ourselves with the assurance that Latin is a 'Disciplinary' subject and that 'all chastening seemeth for the present to be not joyous but grevious, yet afterward it yieldeth peaceable fruit unto them that have been exercised thereby'. We have set an arbitrary standard of attainment, have selected our subject matter with an almost incredible indifference to the psychology of adolescent girlhood and boyhood.

Further evidence of the persistence of these traditional practices can be gleaned from the fact that the Report of the Classical Investi ation of 1924 deplores the existence of them. We note such a re ction in the following quotation which summarizes some of the findings of the committee.[77]

> The chief evil in the traditional standard cours s is the congestion resulting from the attempt to cover all the so-called elementary work in grammar and vocabulary during the first year, and from the requirement of excessive amounts of reading in the later years. As a result, there is neither mastery of Latin itself nor a satisfactory realization of the educational values of Latin. Furthermore, the pressure to 'cover ground' has fostered the use of undesirable methods. ....
>
> ....The traditional course not only does not create favorable conditions for such mastery, but it in effect prohibits it.

Since modern language courses were often taught because of their practical value one would not expect them to be burdened with the same traditional methods as Latin. Such a freedom from tradition has existed only to a small extent because modern languages borrowed the grammar translation method from the Latin teachers. In 1912 Walsh made the following observation concerning modern language teaching.[78]

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[77] Mason DeWitt Gray, The Teaching of Latin, pp. 9-10.

[78] Edward J. Walsh, "Modern Language and Literature" Cyclopedia of Education, Vol. IV, p. 289.

> On the whole, modern languages were, and still are, taught in schools to far too great an extent in much the same spirit and manner as Latin. But owing to ill-equipped teachers and to the shorter length of the courses, the work done in modern languages was only a poor imitation of the kind of work done in the traditional Latin course. --The course consisted of formal drill in grammar, though lacking in real thoroughness, followed or accompanied by hasty translations into and from the mother tongue, of material often badly graded as to difficulty.

Social conditions have affected the relative emphasis given to foreign language courses. For instance, courses in German were introduced in centers having a large German population. During and after the World War, on the other hand, courses in German were not popular. The introduction of courses in Spanish also illustrate the effect of social and industrial conditions. They first became popular in the western states where a knowledge of Spanish was needed by a few people. Later with the increase in trade with Latin America such courses became even more popular in large cities.

In spite of the persistence of the theory of formal mental discipline in foreign-language instruction the integration movement has made headway. In Chapter II it was pointed out that the leaders of this movement conceived education as a process whereby the individual is related to society through interest. *Such a tendency is noticeable in the introduction of the direct method. Over twenty years ago, Lodge pointed out the fact that this method was given some consideration.[79]

> Dissatisfaction of the traditional methods have led in recent years to the employment of the oral or direct method. The advocates of the latter insist that Latin should be taught as if it were a modern spoken

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[79] Gonzaley Lodge, "Latin, Teaching of" Cyclopedia of Education, Vol. III, pp. 647-648.

* See Section 5, Chapter II.

> language, consequently they follow in general the principles of direct teaching as employed in the teaching of modern languages. Almost from the very beginning Latin is the customary language of the classroom. At the outset short commands and questions having to do with the necessary activities and surroundings of the classroom form the means of instruction. The pupils are required to answer, every question in Latin and to follow every command with a statement of what they are doing. As they progress the range of the vocabulary is enlarged but still restricted primarily to the ordinary activities of life. After a little time the teacher tells the class short stories in Latin, explaining the meaning of an unfamiliar word in the same tongue, and requiring the class to give him back the story in such Latin as they command. In this method translation, whether from Latin into English or English into Latin, is practically unknown. This is reserved for the period when the pupil, having obtained a ready command with the fundamental principles of Latin, is ready to begin that comparison of Latin and English idiom which renders translation so valuable an exercise. Drill in syntax is obtained partly by oral exercise and partly by written work. To provide for this drill, the teacher may require the pupils to embody such and such constructions in the written work, while in the oral work he may have various thoughts expressed first in one fashion and then in another, turn from active to passive or from independent to dependent form. Short narratives composed of independent sentences may be rewritten so as to involve various kinds of subordination. The effect of such training is to make the form of the Latin language second nature to the pupils, and to reduce the strain upon the memory of constant practice.

There are still further evidences of the present influence of the integration movement. Some teachers recognize Latin as an aid to English and arrange their instruction accordingly. The emphasis that they give to a study of English words derived from Latin bears out this point.[80] Some foreign language teachers also recognize the value of foreign languages as a means by which other civilizations can be made to contribute to our own. The answers given by teachers to questions from the Classical Investigation

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[80] Gray, Op. Cit., p. 156.

in 1924 indicate this trend.[81] More recent evidence of this trend is the plan upon which some recent textbooks are written. In speaking of these texts Dorrance White says:[82]

> There are all so-called products of the Report of, the Classical Investigation, published in 1924. Let us examine the subject matter of only two of the popular editions. What new emphasis do we find? What is the pupil asked to translate? We find stories that deal with Roman family life, a manner of living that compares favorably with our own. There is a reading exercise on devotion in the Roman family; one on old-fashioned ideals of education; one that portrays the life of two Roman students, pointing the lesson of how to get on in school. Another story gives the account of Arria's heroic sacrifice of her life for her husband. The pupil has a lesson dealing with Roman national heroes; another lesson on the rise of Servius Tullius from slave boy to king. There are reading exercises on such topics as a happy marriage, snobbishness, the secret of success, a humane master, the spirit of forgiveness, modern youth, playing the game, mollycoddles, city life versus country life, an exile's longing for home, women in politics, Roman ideals of citizenship, the relations of Rome with foreign nations, the duties of magistrates, citizens, aliens, the grounds for war and the treatment of the vanquished. .....The pupil is made to see that what is considered fine in English life is also fine in Roman life; that men of the past felt and wrote very much as men feel and write today.

The wholesome trend which has taken place in foreign language instruction in recent years makes that group of subjects socially significant. They can therefore be justified as having a legitimate place in the curriculum in so far as practice in line with this general objective becomes increasingly more effective.

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[81] Ibid., p. 156.

[82] Dorrance White, "New Emphasis in the Teaching of Latin" The Classical Journal, June 1935, pp. 544-554.

Section VI. Vocational Subjects

The vocational subjects were not given much consideration in the high school until the last two decades of the nineteenth century. The commercial subjects, for instance, were almost negligible until the nineties. Bookkeeping was the only commercial subject taught throughout the industrial period and it did not become popular until the nineties. Stenography and typewriting were introduced into the high school after 1890. As a whole, therefore, it can be said that the field of commercial education developed and became popular after the bend of the century. Manual training was not introduced into the high school until the early eighties. Following manual training, home economics became a high school subject. Another group of vocational subjects was introduced with the passage of the Smith Hughes' Act during the World War. This resulted in the introduction of vocational agriculture, vocational homemaking, and trade courses.

Social and industrial conditions have played their part in the making of this part of the high-school curriculum. In Chapter II it was shown that this group of subjects was introduced into the high school because of the demand of the public.* The effect of this demand is also noticeable in the instruction which followed. For instance, the effect of the demand for training in trades is shown by the fact that the idea of the earliest manual training courses was to make tradesmen.[83] Again the effect of the same force is noticeable in the vocational agriculture courses because the idea was

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[83] Walter Albert Jessup, Social Factors Affecting Special Supervision in the Public Schools of the United States, p. 48.

* See Section 4, Chapter II.

train for farming. Consequently facts and skills concerning farming are taught. Likewise we notice the effect of the same requirement in commercial subjects because the idea was to prepare students for positions for office work. The result there is that the high-school commerce departments have put the major emphasis upon the subjects of bookkeeping, typing, and shorthand.[84]

Even the crudeness of our industrial life affected instruction in the vocational subjects. This crudeness made the teachers see the need for good taste, and beauty in simplicity. According to Vaughn and Mays the results of this were brought about largely through the influence of Ruskin and Morris in the closing years of the nineteenth century....[85]

> It was not until the very closing years of the nineteenth century that the emphasis of manual training shifted somewhat from the purely mechanical aspects to considerations of beauty and artistic expression in the objects made. This was the influence of Ruskin and Morris who were impressed with the ugliness and unhappiness of the industrial situation of the time when the introduction of modern machinery and methods of production had driven the craftsman and his wares from the markets; and when the machines not only gained control of industry but also became the masters of the operatives themselves.

Although this group of subjects did not enter the high school until the last two decades of the nineteenth century, formal mental discipline had a great effect upon them. Manual training and home economics serve as two good subjects to illustrate this point. From the beginning the work of the high-school manual training course was formal and without meaning

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[84] Hubert A. Tonne, "Business Education in Secondary Schools" Journal of Educational Sociology, (May 1935), p. 529.

[85] Samuel J. Vaughn and Arthur B. Mays, Content and Methods in Industrial Arts, p. 35.

because it was borrowed from the engineering school detached from mathematics and its professional purpose.[86] The only work done in the high school was therefore such as would merely illustrate the principles of engineering. This fact made it easy for these courses to play into the hands of the formal mental disciplinarians. "They emphasized the view that manual training was for general training, for culture, for discipline and indignantly resented the charge that such courses were for trade and practical purposes."[87] The fate of manual training was to some extent also the fate of home economics. The following quotations are typical of the expression of the formal mental discipline idea in this subject:[88]

> The commercial value of sewing must be small and even its domestic value, except in certain forms, is not what it was thirty years ago; but the habits of attention which it engenders, facilitated by having something tangible to attend to and its peculiar character as a feminine occupation eminently fits it for the manual training for girls.
>
> The moral and economic reasons for the instruction of the hand work have been already presented in a condensed form. Still another may be added that is directly in line of mental education. Every sewing lesson is a positive object lesson of the most excellent description, because it combines so many points of instruction. It trains the sight to accuracy of observations, and the touch to nicety of manipulation. It calls the perceptive faculties, those of form, place, order, color, into active play and drill. It moreover puts the inventive faulties into profitable activity.

This group of subjects was less influenced by modern educational movements.[89] The subject of manual training, however, is perhaps the best

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[86] H. G. Lull, Secondary Education, Orientation and Program, p. 61.

[87] H. G. Lull, Secondary Education, Orientation and Program, pp. 62-63.

[88] Walter Albert Jessup, Social Factors Affecting Special Supervision in the Public Schools of the United States, p. 61.

[89] Charles Hubbard Judd, The Teaching of High School Subjects, pp. 284-324.

example of this influence. In Chapter II it was pointed out that manual training was introduced into the high school by the way of Russia.* It was also pointed out that the Russian engineering laboratory idea had been influenced by Froebel's idea of self activity. In this section it has already been pointed out that much of the original meaning of this subject was lost when it was transferred to the American high school. In spite of this loss, however, some traces of Froebelian ideas remained.[90] The integrationists have later developed this group of subjects around the Froebelian ideas of self-activity and thus we have come to emphasize the vocational significance in its true sense. H. G. Lull says:[91]

> Today we emphasize the educational values, but are beginning to see that the vocational significance attached to manual training, is the real source of educational values. Through its vocational significance manual training offers opportunities for life adjustments. Manual training related to vocations gives the pupil a control which counts definitely for a standing among his fellows. It presents definite appeals to him, and definite appeals stimulate thoughtful activity for he is conscious of his needs and must know what will count for his success. Manual training, as related to the life of the community and the organization of labor and industry, means as much for citizenship as do s any other school activity. Manual training so conceived becomes a source of vital problems, and less a series of exercises to follow, upon specific dictation. ....
>
> The vocational and social significance of manual training provides the conditions under which the development of initiative, organizing power, and reflective thinking as well as accuracy and speed in observation and motor activity become possible. This view of the subject tolerates manual training neither as a discipline nor as a mere preparation for specific skills in industry; it means manual training vocationalized and vocational training socialized. This point of view is now rapidly gaining ground, although manual training to some extent, is still considered as a general discipline.

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[90] Jessup, Op. Cit., pp. 44-46.

[91] Lull, Op. Cit., pp. 63-64.

* See Section 4, Chapter II.

Other vocational subjects than manual training can likewise serve as a means by which the pupil reads a meaning into industrial life. According to modern educational thinking these subjects have a place in the curriculum mostly because they have a cultural responsibility. Therefore vocational courses should provide a variety of vocational activities in order to give the pupil a variety of the necessary social experiences.

Section VII. Art and Music

The development of fine arts as a group of subjects in high school is of recent origin. The development of high-school music, for instance, started in the last decades of the nineteenth century, but did not make much progress until the last twenty years of the present century.[92] In very recent years, however, music has received considerable recognition as a high-school subject. In 1927 Cecil L. Hughes indicated that high-school music was gaining a status comparable to other subjects:[93]

> It is safe to conclude that music in the secondary school is rapidly gaining a status comparable to that of other subjects in the curriculum. It is no longer the mere group singing of a past generation or the extra-curricular activity of a few years ago, but a regular high-school subject, carrying a full credit and receiving sufficient time and attention to make its teaching stand out as distinctly worth while.

The subject of art is also of recent origin in the high-school curriculum. In Massachusetts as late as 1903, 105 of 244 schools gave

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[92] Edward Bailey Birge, History of Public School Music in the United States, p. 161.

[93] Cecil L. Hughes, "Music Instruction in Junior and Senior High Schools of Forty Representative Cities," School Review, Vol. 35, June 1927, p. 357.

no attention to drawing.[94] Even today the subject is not found in many of the rural systems.

In Chapter II it was pointed out that this group of subjects is in the curriculum largely because of social pressure.* The effect of industry can also be seen in the content of this group of subjects. For instance, the early drawing courses were directed merely toward industrial design.[95]

Both art and music have been influenced by the theory of formal mental discipline. It is more or less prevalent in these subjects even today. Jacob Kwalwasser says:[96]

> Probably the most frequently heard and at the same time, most pernicious claim for music education is its alleged power of developing first-rate minds. Many music educators assert that it is the best mind trainer in the curriculum.

The result is that schools often have emphasized the informational aspects of music rather than the inspirational. Pupils are taught to read music rather than enjoy it.[97]

Less than two decades ago we find that Gehrkens deplored this situation in the teaching of music. He said:[98]

> It will be necessary to train a type of music teacher quite different from that now found in many schools. This leader must

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[94] James P. Haney, "Art in Schools" Cyclopedia of Education, Vol. I, p. 229.

[95] Jessup, Op. Cit., p. 28.

[96] Jacob Kawlwasser, Problems in Public School Music, p. 21.

[97] Ibid., pp. 3-19.

[98] Karl Wilson Gehrkens, An Introduction to School Music Teaching.

* See Section 4, Chapter II.

> not only be trained along musical lines, but must thoroughly understand the fundamental principles of education and sociology which are at the root of the demand for democracy that is now being heard so persistently over all parts of the world. ... Let the musician not cause music to fail in its mission because of the narrowness or laziness or lack of vision.

That music was controlled by traditional practices is also apparent from the report of the Commission on the Reorganization of Secondary Education in 1918. This report is concerned with the establishment of new satisfactory aims in music.[99]

Like music instruction, the early high-school art instruction easily fell into the hands of the mental disciplinarians. "The earlier art teaching in the high school was characterized by an effort to reproduce the atmosphere of the art school. Much work was done in drawing from cast and in more or less elaborate studies of the antique."[100] Such art study became routine and easily fell into the hands of the mental disciplinarians. H. G. Lull makes this point clear in the following paragraph:[101]

> As with manual training, the industrial sanction was the social force which introduced drawing and home economics. Soon, however, the industrial motive of drawing was lost, and it came to be regarded as chiefly ornamental and disciplinary. It was held to be an effective instrument in developing observation, forethought, painstaking, taste and imagination, memory of forms, judgment, and ease and precision in the movements of the hands.

The modern educational movement, which recognizes the psychological

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[99] A Report of the Commission on the Reorganization of Secondary Education, Dept. of Interior Bulletin, No. 49.

[100] Haney, Op. cit., p. 229.

[101] H. G. Lull, Secondary Education, Orientation and Program, p. 62.

and sociological basis of music, has a considerable degree of influence both upon high school art and music. Birge says that one reason for the recent increase in popularity of music courses is the application of the principle that every child is entitled to the kind of music education which accords with his talents and inclinations.[102] The high-school music teachers are coming to realize that the purpose of music education is the development of music appreciation. They also are beginning to realize that to develop this the social and psychological factors must be taken into consideration. Mursell and Glenn say that the modern school has chosen music as a means to socialize the pupil. They point out particularly the psychological tendency of this movement in the following paragraph:[103]

> The business of music education in the high school is to organize a situation where the natural musical impulses of the pupil are adequately recognized, and where the school becomes the friend rather than the foe of the will to be musical.
>
> Rather it should show us that the proper organization of the teaching of music is essentially the setting up of opportunities for the actual functioning enjoyment and creation of music. What is demanded is Music education through musical projects.[104]

Recently also art instruction has been influenced by the modern educational movement which recognizes social needs as well as the nature of the child. James P. Haney characterizes this movement as follows:[105]

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[102] Birge, Op. Cit., p. 169.

[103] James L. Mursell and Mabelle Glenn, The Psychology of Public School Music, p. 35.

[104] Ibid., p. 359.

[105] Haney, Op. Cit., p. 229.

> The change in approach to drawing in the high school has been of a nature similar to that in the grades. It has been realized that few of the pupils in these schools can become artists, and that the aim of such training should rather be to help the many to see this study in art as something of much value to them in everyday life. This effort to make the work more alive and appealing has turned the course from the older studio "cast drawing" toward work in applied design. The movement is one which aims to lead the pupil to see that art must exist in good form or bad, in his dress, his home, and in the town in which he lives. It assumes that taste is a subject which can be taught, and strives to teach it, not by talking about it, but through the effort to create fine patterns for hangings, simple forms for jewels, simpler decorations for dress, and a great variety of objects which may be developed through the minor crafts.

Both art and music are therefore being freed from formal procedure. This fact together with the fact that there is an increasing demand for these subjects should give them a prominent place in future curriculum.

CHAPTER IV

CONCLUSION

PRESENT NEEDS IN VIEW OF FORCES PREVAILING IN THE CURRICULUM

Section I. Reinterpretation of Underlying Principles

The history of the high-school curriculum since the Civil War points to the fact that there is a need for unifying ideas and policies. In Chapter II it was pointed out that America has headed toward unification in economic life.* This has increased the need for unity in ideas and policies. John Dewey says: "Unification in economic directions has increased the importance of unity in ideas and policies that affect national policies."[1] It follows that there is a need for such unity in the high-school curriculum, especially in view of the fact that high-school students represent a psychological period of idealism and social sensitiveness and they are quite free from the cramping tendencies of the vocations and institutional mores. But in Chapters II and III it was also pointed out that a compartmentalism has taken place in the curriculum because of traditions and conflicting group interests. In other words the high-school curriculum has failed in large measure to parallel life. It still contains obsolete materials which are justified in terms of formal mental discipline. On the other hand it contains much material the purpose of which is the

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[1] John Dewey, "Toward a National System of Education," The Social Frontier, (June, 1935), p. 9.

* See Section 4, Chapter II.

preparation of pupils as workers and producers, but not for an understanding of the industrial world. The result is that there is no central unifying purpose in the curriculum. In other words it is left without a philosophy.

The high-school curriculum problem then becomes that of finding its educational philosophy. Such a philosophy leaders in the field of education are already expounding. For its starting point it has Froebel's idea of self activity. It is set forth by John Dewey in the following quotation.[2]

> The only true education comes through the stimulation of the child's powers by the demands of the social situations in which he finds himself. Through these demands he is stimulated to act as a member of a unity, to emerge from his original narrowness of action and feeling, and to conceive of himself from the standpoint of the welfare of the group to which he belongs. Through the responses which others make to his own activity he comes to know what these mean in social terms.

It seems quite probable that we can realize this social significance through industrial education for the simple reason that the most vital associations center around industrial life. In other words, the roots of our culture are in the vocations.

But such a philosophy among only the leaders in the field of education is not a solution. The American high school should function in a democracy. Therefore, the other need is that the people adopt a philosophy of life, the standards of which are determined by social consequences. John Dewey says: "A strong unified intelligence and purpose must be built up in support of policies that have a definite trend toward a socialized cooperative democracy."[3] It is noteworthy that Dewey says that this unified

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[2] John Dewey, "My Pedagogical Creed" Journal of the National Education Association, (January, 1935), pp. 13-16.

[3] Dewey, Op. Cit.

intelligence and purpose must be built up. It cannot be superimposed upon the people. Consequently, there is a need for adult education. Furthermore, no standards can become final. They must continually be reinterpreted to fit new situations of social life.

Section II. Rearrangement of Materials

The rearrangement of materials will, of course, be determined by the interpretation given the underlying principles of education. On the one hand, in view of the present interdependence of people, and on the other hand, the compartmentalization in the curriculum, the adoption of a social core for the arrangement of material is necessary. In the first place, the constants of the high-school curriculum must be reorganized in terms of needs for social integration. In the second place, electives must be provided in order to provide for special interests and for specific training for vocations. These electives, of course, must also contribute toward integration. Such an organization means more than mere rearrangement of old materials; it also means discarding and adding. The analysis of materials which are isolated from the social settings should be omitted. On the other hand, we should consider the many socially significant problems. The past should not be studied merely as the past but in contrast relationships and in sequences of direct casual relationships to the present.[4] This applies not only to history and the so-called social sciences but to the

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[4] H. G. Lull, Secondary Education, Orientation and Program, p. 106.

other groups, as the physical and biological sciences, English, mathematics, foreign languages, art, and music.

In order to give a more concrete idea as to changes which might be made in the direction of integration the courses of study of three typical high schools will be considered.

The following is the course of study for the four-year high school at Neosho Rapids, Kansas:

Required subjects:

English	3 units
Constitution	½ unit
Any social studies other than constitution	1½ units
Any subject in mathematics or science	1 unit
Any group other than English	3 units
Any other group than social studies	2 units

Elective subjects:

Mathematics	
Algebra	1 unit
Geometry	1 unit
Commercial Arithmetic	1 unit
Social studies	
American History	1 unit
Modern European history	1 unit
International relations	½ unit
Science	
General science	1 unit
Biology	1 unit
Physics	1 unit
Commerce	
Bookkeeping	1 unit
Typewriting	2 units
Shorthand	1 unit
Spelling	1 unit
Industrial geography	½ unit

Industrial and vocational subjects	
Foods	1 unit
Clothing	1 unit
Farm shop	1 unit
Agriculture	1 unit
Music	
Orchestra	1 unit
Glee Club and chorus	1 unit

The following is the course of study for the senior high school at Emporia, Kansas:

Required subjects:

English	2 units
American government	½ unit
American history	1 unit
Home economics or manual arts	2 units
(One unit may be taken in the junior high school)	
Algebra	1 unit
(May be taken in the junior high school)	
Geometry	1 unit
Any science subject	1 unit
Gymnasium or hygiene	1 year
Any group other than English	3 units
(One unit may be taken in the junior high school)	
Any group other than social studies	2 units
(One unit may be taken in the junior high school)	

Elective subjects:

English	
Journalism	2 units
Mathematics	
Algebra	½ unit
Geometry	½ unit
Social studies	
European history	1 unit
Science	
Biology	1 unit
Agriculture	1 unit
Chemistry	1 unit
Physics	1 unit

Foreign languages	
Latin	3 units
French	3 units
Spanish	3 units
German	2 units
Commercial subjects	
Penmanship	½ unit
Business training	½ unit
Typewriting	1 unit
Commercial geography	½ unit
Bookkeeping	1½ units
Commercial law	½ unit
Industrial and vocational	
Woodwork	1 unit
Woodturning	1 unit
Advanced cabinet making	½ unit
Mechanical drawing	½ unit
Architectural drawing	½ unit
Printing	1½ units
Music and Art	
Music history and appreciation	½ unit
Music harmony	½ unit
Orchestra	1 unit
Band	1 unit
Freehand drawing	1 unit

The following is the course of study for the senior high school at Wichita, Kansas:

Required subjects:

English (composition and literature)	2 units
Any other English subject	1 unit
Constitution	½ unit
American history	1 unit
Any social study in addition to American history and constitution	½ unit
Physical education	3 years
Any science or mathematics subject	1 unit
Any other group than English	3 units
Any other group than social studies	2 units

Electives:

English	
Effective speaking	3 units
Debate	1 unit
English (messenger)	1 unit
English (magazine)	1 unit
College preparatory composition	½ unit
College preparatory literature	½ unit
Creative writing	½ unit
Social English	½ unit
Mathematics	
Algebra	1 unit
Geometry	1½ units
Trigonometry	½ unit
Social studies	
Early European history	1 unit
Modern European history	1 unit
Psychology	½ unit
Modern progress and industrial relations	½ unit
Principles of economics	½ unit
Advanced economics	½ unit
Social problems	½ unit
Science	
Biology	1 unit
Botany	1 unit
Chemistry	1 unit
Physiology	1 unit
Physics	1 unit
Astronomy	½ unit
Foreign language	
Latin	3 units
Spanish	3 units
French	3 units
German	3 units
Commercial subjects	
Commercial arithmetic	1 unit
Penmanship	1 unit
Stenography	2 units
Typewriting	2 units
Bookkeeping	1 unit

Commercial law	½ unit
Commercial geography	½ unit
Business English	½ unit
Business Administration	½ unit
Salesmanship and retailing	½ unit
Industrial and vocational subjects	
Foods	2 units
Clothing	2 units
Family problems	½ unit
Home decoration	½ unit
Clothing appreciation	½ unit
Home and society	½ unit
Mechanical drawing	3 units
Architectural drawing	2 units
Electricity	2½ units
Printing	3 units
Machine shop	3 units
Pattern making	½ unit
Related information	2 units
Related building information	1 unit
Building code	½ unit
History of architecture	½ unit
Free hand drawing	½ unit
Architectural drawing and rendering	1 unit
Estimating building costs	1 unit
Trade shop	3 units
Design and layout	1 unit
Theory of electricity	½ unit
Electrical machinery	1 unit
Plan reading and electrical drafting	1 unit
Applied science	½ unit
Music and art	
Chorus	.3 unit
Theory of music	.2 unit
Harmony	1 unit
Music appreciation	1 unit
Glee club	.3 unit
Band	
Orchestra	

Art	
Art	1 unit
Color and design	1 unit
Free hand drawing	1 unit
Lettering	1 unit
Commercial design	½ unit
Pottery	2 units
Leather craft	1 unit
Clay modeling	1 unit

From a study of the foregoing courses of study it can be seen that schools vary not only with respect to electives which must vary because of the needs and financial status of the school and community, but also with respect to required subjects. A lack of common purpose is particularly noticeable in the setting up of the constant subjects. The constant subjects for these schools might be set up to comply with the constant curriculum objectives in spite of state regulations in Kansas. The English requirements of all of these schools are adequate in so far as the quality of work required meets the communication objectives of English as given in Chapter III.* It seems that the smallest of these schools might make an improvement by making more definite requirements for social subjects. Since all pupils are living in a rapidly changing world consisting of a number of civilizations, which should be significant to them, a requirement should be made for a course in contemporary civilizations. For similar reasons with respect to our own country a course should be required in American history. Such courses should serve as a foundation for a more definite consideration of definite problems of American democracy. The present state required course in constitution in Kansas should be made a senior subject instead of a junior subject and then

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* See Section 2, Chapter III.

enriched to give consideration more definitely to the essential problems of American democracy. It is noteworthy that this small high school does not require the traditional courses in mathematics. On the other hand, the absence of the required course in physical training and hygiene is almost as conspicuous. Surely a four year high school course which is not likely to be preceded by much training in hygiene should give some time to a course which aims primarily to satisfy the objective of health efficiency.

It is evident that the Emporia High School has set up some of its required subjects with constant curriculum objectives in mind. This can be seen particularly by the definite requirements for specific studies in hygiene, English, and social subjects. For reasons given in the preceding paragraph these requirements should be improved by the addition of courses in contemporary civilization and problems of American democracy. It is doubtful that the requirement for the courses in industrial arts and home economics can be justified as fulfilling the constant curriculum objectives. The only major objectives that these two subjects could satisfy would be citizenship efficiency and that objective can be better satisfied through the other subjects which have been suggested. Furthermore, even if they are able to satisfy the objective of citizenship efficiency somewhat, by giving an insight into industrial processes the same can be said for other vocational subjects, so why not respect individual differences by making all vocational subjects elective? The fact that gymnasium and hygiene are required shows a trend toward a consideration for the constant objective of health efficiency. The traditional requirement for the courses in algebra

and geometry should not be made because other courses which are more concrete and practical can more easily be justified as fulfilling the constant curriculum objectives. They neither furnish the content nor the technique for the objectives of citizenship, health efficiency, or language efficiency.

The Wichita High School has evidently made up part of its list of required subjects with constant curriculum objectives in mind. This can be seen by the requirements which are made for physical training and studies in English and social studies. The three year requirement for physical training should give ample time to satisfy the objective of health efficiency, however part of this time could well be spent in a better way than in mere physical training. In view of the fact that most health problems are problems that concern not only the individual but his life in the group, a course in community health and sanitation should be required. The constructive English requirements like those for the other two schools are adequate provided that the individual courses give enough training in the use of the English language to meet the necessary communication objective. The social studies requirement of this school like that of the Emporia school might be improved by the additional requirement for courses in contemporary civilization and problems of American democracy. The absence of a requirement for algebra and geometry in this school is an indication of a recognition of the fact that the required subjects should satisfy primarily the constant curriculum objectives.

The elective subjects must satisfy not only vocational and special interest objectives but the constant curriculum objectives as well. In order that all pupils might receive an insight into industrial processes

through vocations all pupils should select some group of vocational subjects for study. Each group of these vocational electives should be so arranged as to include instruction which will give an actual insight into industrial processes. The vocational elective subjects must necessarily vary in number and nature in accordance with the size and surroundings of the particular school. The small high school can offer only a limited number of electives but should select those that will serve the interests of the community best. For instance, the rural high schools should include vocational agriculture. The larger high schools can offer more electives and should add or eliminate from their lists according to community needs and interests. Some special interest electives like music are always in demand and therefore should be included in the curriculum of all high schools.

To present in a more practical way the direction the course of study should take toward integration, the writer is presenting the following diagram indicating how the subjects, both constants and electives, can be related. Each subject is primarily related to at least one curriculum objective, but also contributes to several.

SENIOR HIGH SCHOOL CURRICULUM
DISTRIBUTION OF SUBJECTS AS RELATED TO CURRICULUM OBJECTIVES

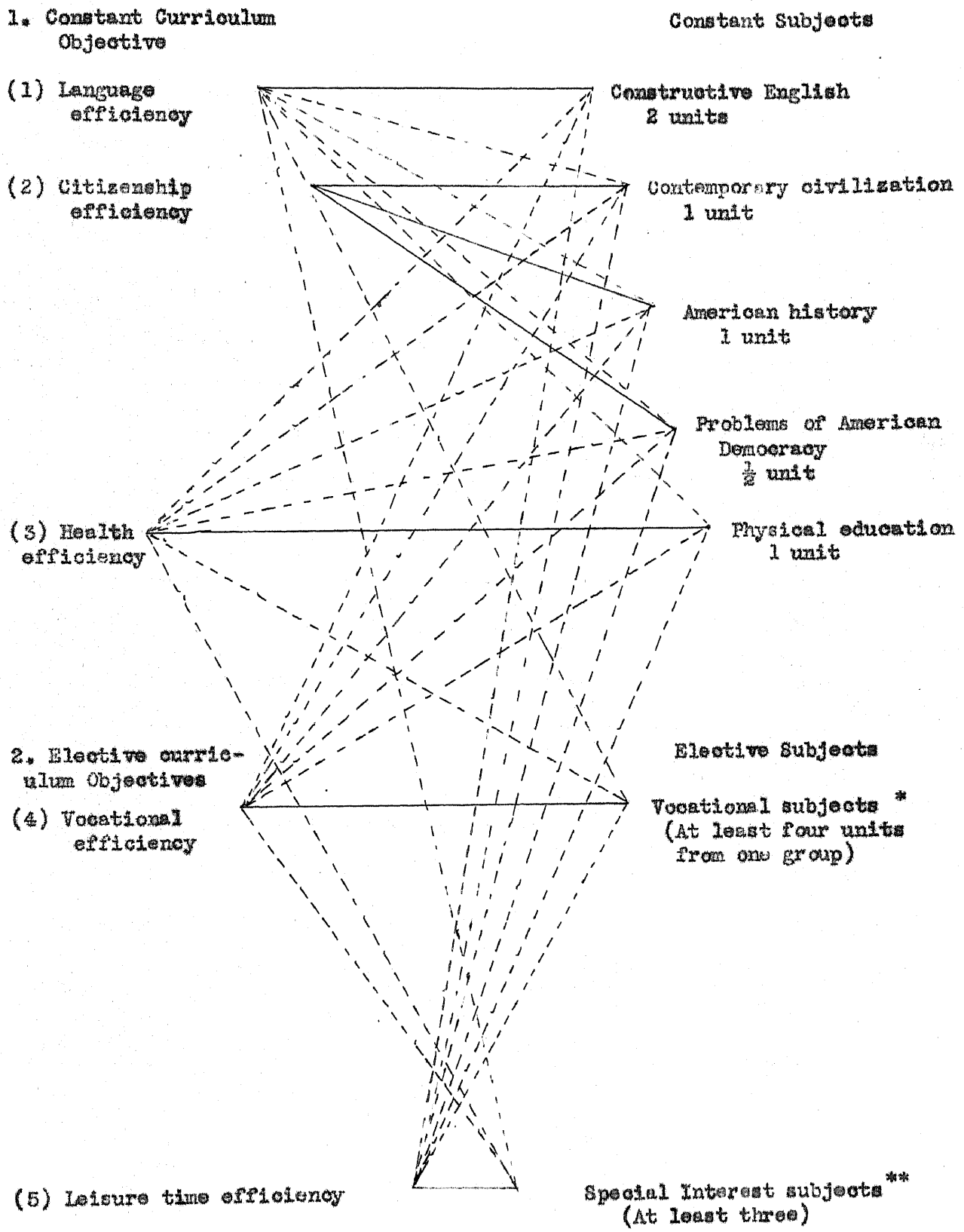

FIGURE 1

*See p. 94.

**See p. 94.

The following is a list of suggested electives:

*Suggested vocational electives

Commercial geography	½ unit
Commercial arithmetic	½ unit
Penmanship	½ unit
Typewriting	1½ units
Shorthand	1½ units
Office practice	½ units
Bookkeeping	2 units
Commercial law	½ unit
Woodworking	1 unit
Shop mathematics	½ unit
Mechanical drawing	½ unit
Cement and metal work	1 unit
Woodfinishing	½ unit
Practical electricity	½ unit
Physics	1 unit
Machine shop practice	1 unit
Auto mechanics	½ unit
Agriculture	1 unit
Farm mechanics	1 unit
Grains	1 unit
Live stock	1 unit
Farm management	1 unit
Biology	1 unit
Foods	½ unit
Home management	½ unit
Home nursing and child care	½ unit
Dietics	½ unit
Dressmaking and millinery	½ unit
Mathematics	1 unit
Chemistry	1 unit

**Suggested special interest subjects

Ancient and medieval history	1 unit
Modern European history	1 unit
English history	1 unit
Economics	½ unit
English literature	1 unit
American literature	1 unit
European literature	1 unit
Spanish	2 units
Latin	2 units
French	2 units
Biology	1 unit
Chemistry	1 unit
Physics	1 unit

Geography	1 unit
Freehand drawing	½ unit
Designing	½ unit
Industrial art	1 unit
Painting	1 unit
Dramatics	½ unit
Chorus	½ unit
Glee Club	½ unit
Music appreciation	½ unit
Instrumental music	3 units
Band	½ unit
Orchestra	½ unit
Debate	1 unit

The foregoing diagram should serve as a suggestion of the fact that each subject, whether constant or elective, is primarily related to at least one curriculum objective but also contributes to several. The material of the different subjects should therefore be selected and arranged so as to serve objectives in common in different ways.* Since we are in a changing world, curriculum reorganization must necessarily be a continuous process.

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* See Section 5, Chapter II.

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