THE INDUSTRIAL ARTS AND THE PHILOSOPHY OF HERBART

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THE INDUSTRIAL ARTS AND THE PHILOSOPHY OF HERBART

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CHAPTER I

INTRODUCTION

If inquiry is made into the beginning of some of the present educational ideas, one will find that they stem from the philosophies of a few great men. From the time of Solon some 600 years B. C. and through Plato and Aristotle, among the older writers and philosophers, and with the beginnings of the modern philosophy as begun by Locke, comes a great part of the present-day philosophy concerning almost every phase of educational theories. Following Locke comes the work of Rousseau, Pestalozzi, and Froebel. Like all great reformers, they were governed more by their instincts and feelings than by logical deduction, for their emotional natures were stirred to the depths at the sight of children growing up in ignorance during their time. Educational advance has been given its initial impulse by notions from men of this type. Early attempts to change these psychological notions to a system led to the theory of dissimilar or independent "faculties". This theory is probably responsible for the faith in what is called formal culture, or discipline of the mind, through studies largely lacking in utilitarian value.

This old system doubtless has rendered good service, for any psychology of education is better than no psychology at all.
In reading about the time immediately prior to the great German philosopher and teacher, Johann Friedrich Herbart, it is evident that there was great need for a change in the educational system if further progress was to be made.

It seems that before this time education was confined more or less to the well-to-do classes of people. This condition resulted in an appeal to the pride, ambition, or shame of the child in order to discipline him and to hold his attention so that he would study. However, when children from families of the lower classes started to school, the instructors could no longer rely on these methods for arousing the child to put forth his efforts in study. It was then evident that a philosophy was necessary to awaken a keen interest in the acquisition of knowledge in the child.

It was about this period that the underlying thought and philosophy of a new type of education which at the present time is called "industrial arts," and in that period was referred to as "manual training," started. Evidence to support this statement comes from the following quotation by Struck:

"Manual training as a form of public education was a matter of slow growth. The underlying thought and philosophy date back to Comenius, Rousseau, Pestalozzi, and Froebel."¹

About this same time Herbart was developing his philosophy and the beginning of scientific psychology. This may be understood from this statement taken from De Garmo:

There was, however, one of the leading philosophers, Johann Friedrich Herbart, who, foreseeing the need that education would have of scientific treatment from the standpoint of psychology, devoted much of his time to the elaboration of a rational system of pedagogy.\(^2\)

The influence of the thoughts of Herbart were revolutionary in the field of educational philosophy and educational methods. While a student of Fichte and while a freshman and sophomore at the University of Jena he broke away from the ruling philosophy of the times and laid the groundwork for his own future system of philosophy. Later, his articles on Pestalozzi's works on *How Gertrude Taught Her Children* and Pestalozzi's idea of an *A B C of Observation* not only gave a more scientific approach to these works, but actually added a great deal that might be compared to the adding of an enriched curriculum to an almost meaningless course of study. Still dissatisfied, Herbart continued writing, adding to his philosophy, and experimenting with methods of instruction until in 1829 he finished *General Metaphysics and the Beginning of the Philosopher Natural Science*. This work revealed its author's intellectual energy and many-sidedness and contained the foundation of Herbart's philosophy. This work so completely explained his

\(^2\)Charles De Garmo, *Lange's Apperception* (Boston, 1903), Introduction.
system of philosophy that there was no longer any danger of the world's misunderstanding him.

The influence of his thoughts started a vigorous school of educational thinkers in Germany known as Herbertians, and this movement eventually spread to America. Through the influence of his works and of such men as Karl Lange, Elmer E. Brown, Charles De Garmo, Charles and Frank McMurtry, and many others too numerous to mention, Herbert's work could be considered the beginning for much of the present objectives and philosophies of general education.

Since no direct mention is made of industrial arts, or manual arts as it was then known, in all of Herbert's works on the science of teaching based on sense-perception and apperception and since manual training, as had already been established, began before or during his time, it is important to determine whether industrial arts will or will not add to education as taught by Herbert.

Statement of the Problem

This study attempts to analyze the philosophy of Johann Friedrich Herbart in the field of the science of education and to determine if the philosophy of industrial arts would make his philosophy more meaningful and far-reaching.
Definitions of Terms Used

"Industrial arts," as Good defines the term, is made up of the following areas:

1. Those occupations by which changes are made in the form of materials to increase their value for human use.

2. An area of education dealing with socio-economic problems and occupational opportunities, involving experience with a wide range of materials, tools, processes, products, and occupations typical of an industrial society.

3. A phase of the educational program concerned with orienting individuals through study and experience to the technical industrial side of society for the purpose of enabling them to deal more intelligently with consumer's goods, to be more efficient producers, to use leisure time more effectively and enjoyably, to have a greater appreciation of material culture, and to act more intelligently in regard to matters of health and safety, especially affected by industry.³

"Pedagogy" is the art, practice, or profession of teaching, and in this study, it shall be used to refer to systematized learning or instruction concerning principles and methods of teaching.

Throughout the text of this study the term "psychology" shall be interpreted as meaning the science which treats of

the mind in any of its aspects by systematic knowledge and investigation of the phenomena of consciousness and behavior.4

Related Studies

The investigation of published and unpublished materials available failed to disclose any study concerned with the addition of industrial arts to the philosophy of Herbart. The material discussed primarily the addition of subject-matter fields in general education, other than industrial arts, to Herbart's philosophy.

Sources of Data

The data used in this study were obtained from books, periodicals, pamphlets, dictionaries, encyclopedias, and other published and unpublished materials on topics concerned with the life and work of Johann Friedrich Herbart and the objectives of the industrial arts education program.

Treatment of Data

This study consists of six chapters. Chapter I includes an introduction, a statement of the problem, definitions of terms used, related studies, sources of data, and the treatment of the data.

4E. J. Asher, Joseph Tiffin, and F. B. Knight, Introduction to General Psychology (Boston, 1953), p. 4.
An account of the birth, education, work, influence on education in Germany, and later life of Johann Friedrich Herbart is given in Chapter II.

Chapter III is a background of different theories of education by men who pioneered education and developed it up until Herbart's time.

An analysis of the philosophy of Herbart and how his philosophy was influenced by other men after his time is given in Chapter IV.

A summary of the philosophy of Herbart and a survey of the development and work of industrial arts is presented in Chapter V so as to answer the question, "Would the industrial arts add to the philosophy of Herbart?"

At the end of the study, a summary is made, stating the conclusions of the study.
CHAPTER II

THE LIFE AND WORKS OF JOHANN FRIEDRICH HERBART

The time in which Herbart lived was at once the age of heroic speculative thought in the universities and the age of economic and political degradation among the common people. Herbart, being a thinker, responded to the former; for the native forces of the mind exert themselves in accordance with surrounding intellectual and moral influences. Furthermore, minds become imbued at an early age by the spirit of the times. This is evidenced somewhat by Herbart's essays on the moral freedom of man as influenced by lectures attended by him at the age of fourteen. His high degree of intelligence is shown from this concluding statement on one of his essays on human freedom: "It is contrary to all philosophy to reject an argument against which we have nothing to urge."2

Johann Friedrich Herbart was born at Oldenburg, Germany, on the 4th day of May, 1776. He died a professor at Gottingen, Germany, on the 11th day of August, 1841.3 His

life span reached over the period of great systems of thought. The turbulence existing during his life does not seem to have altered his life to any noticeable extent. Some of the more learned scholars of the time were caught in the grip of the age and became, among other things, firebrands of patriotism, but Herbart remained in the field of psychology where he was later to gain fame through his contributions.

Herbart's experience as a teacher would seem to be too small a thing to mention," yet to a man who can see an oak tree in an acorn, who can understand all minds from the study of a few, such an experience may be most fruitful." His teaching experience started at the age of twenty-one. As he was finishing his college career at the University of Jena, Herbart accepted a position as tutor to the three older children of Herr von Steiger-Reggisberg, the governor of Interlaken, Switzerland. This experience proved to be most helpful to him because he was required to make a bi-monthly report to his employer concerning the study, conduct, and progress of these boys. Five of these reports have been published; nothing is known of the other nineteen.⁵

Many of the fundamental ideas that were afterwards included in the structure of his system were contained in these letters. Here he conceived the idea of "educating

⁴De Garmo, Herbert and the Herbartians, p. 12.

⁵F. P. Graves, Great Educators of Three Centuries (New York, 1912), p. 168.
instruction," and the possibility and benefit of reading the
Odyssey in the original with boys of eight to ten years of
age. This "educating instruction" was the term used by
Herbert to mean the plan by which certain subjects were of-
ered to give the child a guidance for his imagination, and
facts which the child's mind might assimilate or apperceive
to a degree of moral self-realization. Later, after he had
worked with mathematics, he wrote that mathematics are indis-
pen sable for the beginning, middle, and end of an educating
instruction. He also endeavored to arouse in his pupils a
many-sided interest, and intertwined the pupil's interest
with his own by mutual study of the same subject. It was with
these same three students that Herbert gained the wealth of
educational experience which enabled him twelve years later,
when he had made trial of its worth practically and theoreti-
cally, to write as follows:

The teacher, as tutor to two or three pupils,
creates his own school. To him who hears the true
artist's call to education, the small dull space in
which he at first perhaps feels himself confined,
soon becomes so bright and large, that he discovers
the whole of education therein, with all its motives
and needs, the satisfaction of which is truly a work
immeasurable. Be he ever so learned, the boundary
line of his knowledge must fade away in the face of
all that amongst which he ought to choose, if he would
find what is best suited to his pupils. If he be at
once strong and flexible nevertheless the strength and
the flexibility which he needs to rule perfectly, and
protect the varied dispositions of those entrusted to
his care, must appear to him an ideal. The home, with
all its relationships and customs, must become infi-
nitely valuable to him, so far as it helpfully co-
operates, and what is wanting he must miss, that he
may learn to desire it. Thus begins the education of
the true teacher.\textsuperscript{6}

Here Herbart gives his ideals of the truly devoted in-
structor, and in his words we conceive an inkling of his
reference to his days of instruction of the three Swiss boys.
Here, this experience, though insignificant to most, is shown
to have had a profound effect on his complete science of
education that he was later to produce.

After resigning his tutorship in Switzerland, Herbart
went to Bremen to prepare himself for an academic career in
the university. He stopped at Jena for a time, and then
visited his parents at Oldenburg. Here he offered to take up
the study of law, which was his parents' wish. They perceived,
however, how much his cherished ideals on the study of psychol-
ogy would be disturbed by such a course, and consented to let
him have his own free choice. About this time his father and
mother separated on account of domestic troubles, and Herbart
was free to continue his chosen career. At the university he
tutored a young man for the university and unfolded his peda-
gogical ideas to some appreciative mothers belonging to the
higher ranks of society. He also wrote several articles and
lectures on educational topics. Two of these articles, that
on Pestalozzi's recent work—\textit{How Gertrude Taught Her Children},
and the one on \textit{Pestalozzi's Idea of an A B C of Observation},

\textsuperscript{6}Johann Friedrich Herbart, \textit{The Science of Education}
(Boston, 1896), p. 7.
gave a more scientific form to the thought of the Swiss reformer. The latter essay was later extended by one of Herbert's most important contributions, that on The Moral Revelation of the World and the Chief Function of Education. During this stay at Bremen educational thought was a recreation rather than a serious labor, and his chief efforts were expended upon Greek and mathematics. The question of means with which to live began to press down upon Herbert, as it has done with many other intellectual benefactors to the world. He turned to his friends for aid, especially to Johann Schmidt, with whom he was living, and they so supplied his wants that he was able to proceed comfortably to Gottingen. Here however, his care was increased in a distressing manner. He was shorter than medium height, and the upper portions of his body were proportionately larger than the lower. He was strong and muscular, but he had long suffered from the baleful effects of the anxieties and over-exertions arising from his state of poverty. During the first few years at Gottingen, his health was so shattered that he expected every winter to be his last. Yet in spite of these drawbacks, he pursued his course and though little public record remains there is evidence of two brief essays written during this time upon The Difference.

7William J. Eckoff, Herbert's A B C of Sense-Perception (New York, 1903), p. 32.
8Graves, op. cit., p. 170.
Between the Idealism of Kant and that of Fichte, and *A Critique of the Conception of the Ego*, as stated by Charles De Garmo. 9

During this trying period at Gottingen, Herbart began to lecture upon practical philosophy. It is said that these lectures were so fine that he was offered the position of a full professorship at Heidelberg in 1805, which he declined, though the position greatly attracted him.

During this period of activity at Gottingen, from 1802 to 1808, Herbart published a number of important works, the principal ones being: *A second edition of the A B C of Observation*, in 1804, to which was added *The Moral Revelation of the World as the Chief Function of Education*. 10 In 1804 was published also *Standpoint for Judging Pestalozzi's Method of Instruction*; in 1806 he issued *General Pedagogics* (his chief work on education), *Chief Points of Metaphysics*, and *Chief Points of Logic*. In 1808 he finished his *General Practical Philosophy*. 11 Here at Gottingen he achieved the position of associate professor. It was about this time that Herbart was offered Kant's chair at Konigsberg. Herbart, ready to accept this flattering offer, wrote as follows:

How happy I was to receive the offer of this, the most renowned chair of philosophy, the place which when a boy I longed for in reverential dreams, as I studied the works of the sage of Konigsberg. 12

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10 Eckoff, *op. cit.*, p. 81.
Herbert moved to Königsberg during the spring of 1809, where he established a pedagogical seminary connected with which was a practice school. This practice school was never to have more than twenty students who were to be instructed according to the most scientific methods. The actual teaching was done by a few members of the seminary, who at the same time received philosophical and educational instruction in the university.\textsuperscript{13} The purpose of this seminary was to train these student-teachers to become superintendents of educational institutions upon the completion of their course. The seminary was fully established in 1810. The same seminary was continued and in 1896, under the direction of Professor William Rein, it became the most noted institution of its kind in Germany.\textsuperscript{14}

In the house where he lived at Königsberg, Herbert met and married an eighteen-year-old English girl. Their marriage proved to be a happy one, as she entered most heartily into the plans and ambitions of her husband. This marriage served to show that he believed, as Pestalozzi believed, what he had always taught, that family life was the ground on which education ought to grow. He even used his home to give his students the benefit of this experience.\textsuperscript{15}

\textsuperscript{13} Dorothy MacNarzy, \textit{Herbertian Contributions to History}
\textit{Instruction in American Elementary Schools}, Teachers College Contributions to Education No. 920 (New York, 1906), p. 36.

\textsuperscript{14} De Garmo, \textit{Herbert and the Herbertians}, p. 20.

\textsuperscript{15} De Garmo, \textit{Lange's Apperception} (Boston, 1903), p. 157.
The Königsberg period of Herbart's activity was most fruitful in published works. The prominence of his position gave occasion for numerous addresses and minor contributions to philosophy and education, many of which were published.

His System of Psychology was completed in 1814, and his Text-Book of Psychology in 1816. The main work, however, Psychology as a Science, did not appear until 1824-5. His General Metaphysics was published in 1828 and 1829 in two volumes, and his Brief Cyclopaedia of Philosophy, in 1831.16 The best edition of his pedagogical works is Willmann's scholarly edition in two volumes of about six hundred pages each.17 An English translation of The Moral Revelation of the World as the Chief Function of Education and of the General Principles of Education (Allgemeine Pedagogik) has been prepared by a couple named Farkin.18

By now, restricted by petty officialism, and vexed by misrepresentations, Herbart began to seek work outside of Prussia. In 1833 Gottingen sought his services, and he accepted the call. As his time at Gottingen was spent in preparing and delivering university lectures, his published works were few. In 1835 he issued the Outline of Pedagogical Lectures.

16Herbart, op. cit., p. 19.
17De Garmo, Lange's Apperception, p. 69.
18De Garmo, Herbart and the Herbartians, p. 21.
On August 9, 1841, Herbert gave his last lecture. Two days later he suffered a stroke of apoplexy that ended his career. His grave in Gottingen is surrounded by a tall iron fence, inside of which is a cross bearing the following inscription:

To penetrate the sacred depths of truth,
To strive in joyful hope for human weal,
Was his life's aim.
Now his spirit free hath perfect light,
Here rests his mortal frame.

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19 Herbert, *op. cit.*, p. 23.
CHAPTER III

EDUCATIONAL THEORIES BEFORE HERBART

Before analyzing the philosophy of Herbart, it is first necessary to establish the meaning of philosophy in relation to Herbart and education and then to summarize the theories and works of several of the men who had a profound effect on Herbart and his science of education.

Definitions of Philosophy

What is philosophy? Some definitions of philosophy are, "the body of principles underlying a given branch of learning," "practical wisdom that comes from knowledge of general laws or principles." Here the inference is plain that philosophy is knowledge about principles. Others have said, "philosophy is at once an organism of thought, a method of thinking." "It is persistent effort to think things through to a consistent whole." "It is a method—a method of approaching, of studying, of observing." ¹

In order to establish Herbart's works as a philosophy, the following two definitions, as taken from above, will be discussed: 1. Philosophy is the body of principles.

¹Statement by S. A. Blackburn in lecture, North Texas State College, Denton, Texas.
underlying a given branch of learning. 2. It is persistent
effort to think things through to a consistent whole.

Herbert's system of education may be called a philosophy
in that, according to the first definition, the study of a
system of education is definitely a branch of learning. Also,
his system of education is made up of a body of principles
based on psychology, ethics, doctrine of interest, instruc-
tion and school discipline complying completely with the first
definition. His complete educational works may also be re-
ferred to as a philosophy, according to the second definition,
in that, from the age of fourteen until his death Herbert
showed his untiring efforts in trying to establish a near
perfect system of education. He did this by thinking through
his educational doctrines and applying them practically and
theoretically in such a manner that the end result was to be
the development of character in a broad social sense. This
means that the child would be fitted for every important phase
of family, social, civil, religious, and economic life, in
short, to develop the whole boy or girl.2 These statements
are meant to show that Herbert did put forth a persistent
effort to think things through to a consistent whole and that
his system is definitely a philosophy.

Charles De Garmo, Herbert and the Herbertians (New
Influence on Herbert's Theories

Before the time of Herbert there were many men who introduced various innovations and reforms into modern education. These men and their systems will be treated so that their effect on Herbert's philosophy may be understood.

Education Among the Greeks

As the originators of what is called philosophy, the Greeks will ever be remembered. Education has always been a favorite problem with philosophers since their time. Until the time of Alexander, the main subjects of education among the Greeks were music and gymnastics, that is bodily training and mental culture, music or the science of the muses, being divided into the preliminary training of grammar, and music properly so called. At a late period, more subjects were introduced, and the series of studies came into use which was known as "encyclopedia." This was composed of the seven arts: grammar, rhetoric, philosophy or dialectic, arithmetic, music, geometry, and astronomy, which continuing through the Roman period, lasted under the name of Trivium or Quadrivium until the close of the Middle Ages. The first duty of the Greek boy was to learn his letters. This was coincident

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4 Oscar Browning, Educational Theories (New York, 1905), p. 5.
with learning to swim, so that one who knew neither swimming nor letters was an ignoramus, according to Greek thinking. It seems that the Greek boys had some of the same troubles in learning their letters that boys have today, and to try to do away with this problem the sophists invented methods of aiding instruction, and the alphabetical tragedy of Callias, which was probably an attempt to teach letters in play. The Greeks carried the art of teaching numbers to a considerable refinement. They used the abacus and had an elaborate method of finger reckoning, which was serviceable up to ten thousand. Drawing was the final accomplishment to this training. By the time the fourteenth year was completed, the Greek boy began to devote himself seriously to the practice of athletics. This devotion to athletics was probably a finish to his academic work.

Plato believed that education was not merely instruction, or training, but that it should include all the influences that are brought to bear on the soul. He believed that to have harmony among the members of the state, the state should control the education and marriages of its members. In the Republic he gave a complete plan by which all the youth were to be educated. This plan listed the complete training

5Ibid., p. 6.

6Thomas Davidson, Aristotle and Ancient Educational Ideals (New York, 1902), p. 139.
from birth through their thirty-fifth year. This plan made provision for the less talented student to drop out after he had reached his intellectual capacity.

There were many important differences between the teaching of Aristotle and that of Plato. Aristotle was above all a scientific and practical inquirer. Men, he said, have souls and reason. He also maintained that the highest object of man is the attainment of happiness, and the highest happiness of man is to be reached by perfect virtue. The highest virtue is that of reason. The end of life, and therefore of education, is the attainment of intellectual and of moral virtue, which bring with them the truest pleasures of which man is capable. The means of obtaining this are three—nature, habit, and instruction. In education, then, which presumes natural gifts on which to work, habit must come first, instruction second. The semirational part of human nature develops before the reasoning part; the body develops before both. Therefore the order of education must be—(1) bodily; (2) moral; (3) scientific. Philosophy, according to Aristotle, has for its object the knowledge of the first cause, and by this one learns to know everything else. The highest of the practical sciences is politics, which has for its object the attainment of the highest good—that is, happiness in the

7Browning, op. cit., pp. 11-14.
state. It requires a deep moral nature for its pursuit, and therefore is not suited for the study of youth.8

Roman Oratory

After the Greek philosophy comes Roman education. The Romans valued learning only when it had a practical purpose. Philosophy was regarded as a danger rather than a help. As a consequence to this belief, the youth were started at the age of seven to learn the first elements of reading and writing. The teaching was done mostly by having the pupils repeat the actions of the teachers. This preliminary learning consisted of reading, writing, and reckoning, a form of arithmetic with the use of the fingers to represent values.9

This preliminary training lasted from the seventh to the twelfth year. The children then began to study Latin, grammar, oral orations, and history. At the age of sixteen the young Roman assumed the dress of manhood. He now chose his profession, either the life of a country gentleman devoted to the patriotic duty of agriculture, the army, the senate, or the forum. The objective of the earliest form of this Roman education was to mold the man of action himself, to make a citizen fit to perform justly, and skillfully, all the offices, both public and private, of peace and war.10

8Davidson, op. cit., pp. 161-165.

9Earnest Carroll Moore, What is Education? (Boston, 1915), pp. 79-80.

10Browning, op. cit., p. 22.
Humanistic Education

After the two principal education systems of the pagan world, there came a great change in the character of education. It was known as the humanistic education era. This great change came with the introduction of Christianity. The change came because slaves were given their freedom in most places, and most important, the individual was no longer considered to exist for the state, but personal relations between God and individuals were stressed. Naturally this new education was begun with an ecclesiastical character, but later philosophy, geometry, grammar, and rhetoric were added. This system lasted through the Middle Ages, and its organization was finally separated to the degree that no higher education system was left. This humanistic education later was given a systematized curriculum by a man named John Sturm, and this pattern was to last several centuries. Luther was perhaps the first man to conceive the idea of universal education; and as such, did much to refine humanistic education. There were two disadvantages in the humanistic conception of education. First, that words were taught instead of things; and second, that language was not taught as a subject that was fitted and complete for the service of life.11

Realists

In showing the progress of the theory of education that led to Herbert's theories, one reads, after the humanists, the realists. The most notable realists were Wolfgang Ratiske, John Amos Comenius, and Francis Bacon. Bacon was the man who discovered the method of teaching by inquiry. This means that his students were encouraged to learn by inquiring into secrets and to gain experience in this way rather than learning a pre-conceived principle or inherited formula and deducing all knowledge from this.

This system did very little for the youth, and many of the later educators failed to recognize Bacon as a great benefactor to the philosophy of education; however, some believe that he had an interest in promoting scientific research and higher education, and that he had a belief that his organization would gradually grow to include the education of the youthful generation. Bacon is also recognized for placing the science of education as a department of psychology. His theories also gave birth to many of Wolfgang Ratiske's theories and beliefs.

Ratiske's importance as a contributor to educational theory lies mainly in his reforms on a better method of teaching languages, and his anticipation of many principles of later pedagogy. He won a great many educators over to his principles and many of his ideas were carried on and expanded.12

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12 Robert H. Quick, Essays on Educational Reformers (Syracuse, 1900), pp. 69-79.
John Amos Comenius is one of the most noted of the realists. He used and expanded many of the theories and practices of Ratiche. The theories of Ratiche and Comenius, even though they were impractical, classify these men as spiritual ancestors to Herbart because of the similarity of doctrines. Comenius' main principles of education were founded on his belief that the ultimate objective of man was to attain eternal happiness in and with God. He believed that man has a natural impulse, or tendency, to improve himself in virtue and piety, but that education was the only way to materialize this impulse. As a result of this thinking he believed that it was the duty of the school to educate for this objective. This belief also led him to promote public education to all classes of people and to both sexes. He said the three graces to the soul are perception, will, and memory, or conscience, and that man was anxious to use perception to obtain harmony of his moral nature. As a consequence to this theory, his belief was that the true method of education is to follow nature. In following these natural tendencies every man's nature would develop itself by this virtuous impulse if education would only remove the hindrances to these tendencies. Upon these general principles Comenius founded a system of short, easy, and speedy learning.

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14 Ibid., pp. 36-37.
Comenius gives a full account of his methods and curriculum construction to carry out his basic principles that have just been explained. Although these direct references to subject matter fields other than industrial arts are of importance, his mention of work of the industrial arts type is of much greater importance to this study.

This statement, by Monroe, associates Comenius with a study that resembles that objective of industrial arts which advocates the teaching of the proper use of materials:

Even Comenius recognized the futility of thoroughness in a wide range of instruction, and he expresses willingness to be satisfied if men know the principles, the causes, and the uses of all things in existence. It is general culture . . . that he demanded.  

Comenius made the following statement concerning the methods of instruction in the arts that are particularly applicable to industrial arts:

The use of instruments should be shown in practice and not in words alone; that is to say, by example rather than by precept. Practice should commence with the rudiments and not with ambitious works. Beginners should at first practice on a material that is familiar to them. At first the prescribed form should be imitated with exactness. The first attempt at imitation should be as accurate as possible . . . Errors must be corrected by the master on the spot. . . .

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15 W. S. Monroe, Comenius and the Beginnings of Educational Reform (New York, 1900), pp. 88-89.

Comenius began his canons with the following:

Artisans do not detain their apprentices with theories, but set them to practical work at an early age; thus they learn to forge by forging, to carve by carving . . . In schools, therefore, let the students learn in this manner . . . and those whose efforts prove successful will experience the truth of the proverb: "We give form to ourselves and to our materials at the same time."\(^\text{17}\)

It is not to be mistakenly assumed that Comenius was making a direct reference to industrial arts although it could be interpreted as such. There seems to be "no indication that (he) had reached the point in his thinking where he would teach mechanical arts through shopwork instruction in the school."\(^\text{18}\) Apprenticeship was the method of teaching a handicraft then in vogue.

Comenius mentions the idea of adding work of the industrial arts type to education. This establishes him among the first in the field of philosophy to make such statements. It is such references as these, given by men who influenced Herbart's philosophy, that causes this question to arise: Why did Herbart not add the work of industrial arts to his ideal curriculum?

**Naturalists**

For the most part, the systems of education that have been described thus far have had the object of making a

\(^{17}\text{Ibid.}, \text{p. 159.}\)

\(^{18}\text{C. A. Bennett, History of Manual and Industrial Education up to 1870 (Peoria, 1926), p. 38.}\)
scholar of the man instead of making him a man, capable of taking his part in the battle of life. Some of the men already described had certain parts of their theories that conformed to the naturalist theories. One such man was Comenius. These men were not called naturalists merely because they followed the naturalist theories of Comenius, but because they set before themselves as the chief good the development of the entire nature, and not merely the intellect or any part of it. The principal representatives of the beginning of this school are Rabelais and Montaigne.

Rabelais, although a confirmed naturalist, tended to overemphasize useless learning. This was probably the result of the difficulty of making such drastic changes in such a short time. Even though Rabelais did overemphasize useless learning, a tendency of the realist, he did exercise a predominant influence on Locke and Rousseau, who are the principal advocates of naturalistic education.\(^\text{19}\)

Montaigne was a greater vindicator of naturalistic education than was Rabelais. He advocated foreign travel, conversation, more correction by mothers, the undergoing of hardships such as running, wrestling, music, dancing, hunting, riding, and fencing. These things he advocated for all youth, and for the "gentleman" he listed the intelligent study of history and manners. For the "gentleman" he also wanted to teach

\(^{19}\text{Browning, op. cit., pp. 68-69.}\)
elements of logic, physics, geometry, and rhetoric. After all these studies, the gentleman would then be able to choose the branch of science he wished to follow. From this description, it is easy to see why he found a follower in Locke and Rousseau.20

These schools of educationalists that have been described form the basis for most of the later theories on education. The principal theorists arising during the interim between the time of the humanists and Herbart's time are John Locke, Jean Jacques Rousseau, John Bernard Basedow, and John Henry Pestalozzi.

John Locke

Graves wrote that Locke was a "humanistic"-'social' realist, who leaned somewhat toward the 'sense realism' of Comenius.21 Locke did not agree with Montaigne on the use of corporal punishment in the ideal school.22 He did believe, as Montaigne did, in the "gentleman" having accomplishments that did not come from books. Some of these are dancing, horseback riding, fencing, and wrestling. Locke also had in mind teaching industrial arts, as it is known today, when he made this statement:

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20Browning, op. cit., p. 83.

21Graves, op. cit., p. 52.

The pupil should also "learn a trade, a manual trade; may, two or three, but one more particularly." This the future gentleman should acquire, not with the idea of ever engaging in it, but for the sake of health and of "easing the wearied Part by Change of Business."23

Another statement causing one to realize even more that Locke advocated the work of industrial arts is this statement by him:

By all means, let a gentleman learn at least one manual trade, especially such as can be practised in the open air. This will make his leisure pleasant to him, and will keep him from useless and dangerous pastimes.24

Locke built his ideal curriculum upon the theory that education should be discipline. He made this clear when he wrote:

Learning must be had, but in the second place, as subservient only to greater qualities. Seek out somebody that may know how discreetly to frame his Manner: Place him in Hands where you may, as much as possible, secure his Innocence, cherish and nurse up the good, and gently correct and weed out any bad Inclinations, and settle in him good Habits. This is the main point, and this provided for, Learning may be had into the Bargain.25

Locke believed that all these things should be taught the gentleman, and if a pupil should be a professed scholar then he should continue to study such scholarly subjects as Greek, painting, and music.

24 Quick, op. cit., p. 139.
25 Graves, op. cit., p. 53.
Locke's aim was to give a boy a robust mind in a robust body. The boy was to be trained, not for the university, but for the world. Good principles, good manners, and discretion were to be cared for first of all; intelligence and intellectual activity next, and actual knowledge last of all. The ideal which Locke proposed was not the finished scholar, but the finished gentleman.26

Jean Jacques Rousseau

Rousseau was a strict naturalist as was Locke. Rousseau, in developing his theories of education, undertook to show the rotten state of the existing society and the proper method of correcting this condition by rearing children so as to make them what they ought to be. Rousseau's chief work on education was Emile. In his five books on Emile he used the name Emile to denote a fictitious student. He gave an account of Emile's life from birth through the time that he would no longer need any other guide. Rousseau believed that formal instruction should not begin until the twelfth year. He said that after the boy reached the age of twelve he should begin his studies of science, local topography and map drawing, elementary physics, and a type of trade.27 The similarity of this trade and industrial arts may be seen from this statement by Rousseau:

27 Jean Jacques Rousseau, Emile (New York, 1900), pp. 130, 138, 143.
In order to learn the interdependence of men from the industrial rather than the moral side, Émile and his tutor now also labor in the various arts, and that he may be independent of changes in fortune and revolutions in government, the boy is to learn a trade. Cabinetmaking, as being 'nearest to the state of nature' and most capable of exercising both mind and body, is chosen. 28

Rousseau believed this trade should be learned so that the individual may fall back on it to make a living if all else failed. This, of course, is contrary to the purpose of offering industrial arts in the general education program.

At the age of fifteen Rousseau taught that the boy should start his ethical training. By this he means to make the child affectionate, moral, and religious. In accomplishing this he would have the child meet and watch, as a spectator, all types of evildoers, wretchedness, and sin. This, as Rousseau believed, would turn his character toward benevolence and goodness. 29

Rousseau, in apparently giving free play to Émile, actually kept him under the constant direction of the tutor. It is said that Émile, inspite of inconsistencies, is a great work because it has wisdom, sentimental appeal, and clear presentation.

John Bernard Basedow

Basedow's chief contribution to education was the founding of an educational institution called the Philanthropinum.

28Graves, op. cit., p. 93.
29Rousseau, op. cit., p. 183.
The underlying principle of this school was to teach everything according to nature. The natural instincts and interests were to be directed and not suppressed. The wealthy boys were to do manual labor for two hours and spend six hours in school. The boys from families of small means labored six hours and studied two. They studied such subjects as Latin, French, anatomy, trades, history, commerce and others.\textsuperscript{30} He also advocated the teaching of some of the fields included in industrial arts. This may be recognized in the following statement taken from Graves:

\begin{quote}
Every one, however, was taught handicrafts—carpentry, turning, planing, and threshing—as a recognition of the educative value of constructive work.\textsuperscript{31}
\end{quote}

Basedow's system seems to have had good results at that time because it introduced many new ideas into all parts of Germany and Switzerland, and these were later carefully worked out by Pestalozzi and Herbart.

\textbf{John Henry Pestalozzi}

The writings of Rousseau stimulated Pestalozzi who established several schools, all of which for one reason or another were discontinued. In the school at Yverdon, Switzerland, which lasted twenty years, Pestalozzi's greatest success was achieved. He had great faith in education as a

\textsuperscript{30} \textit{Quick, op. cit.}, pp. 189-194.

\textsuperscript{31} \textit{Graves, op. cit.}, p. 117.
means of developing society. He was a keen observer who discovered that words easily became substituted for genuine understanding and that much which passed for knowledge was but a flow of empty words. Hence, he believed that children should discover largely by doing. The teacher, Pestalozzi discovered, had to guide the process of getting first-hand experience, so that knowledge obtained in this manner would be real and genuine. His idea was to train the child's senses to alertness and introduce him to proper experiences. Through these changes the encyclopedic process of learning encouraged by Comenius was eliminated. Pestalozzi's chief works were Leonard and Gertrude, How Gertrude Teaches Her Children, and the A B C of Observation. These last two works were later the bases for several of Herbert's essays. Pestalozzi was a staunch advocate of universal education. He believed that poverty could be relieved and society reformed through the means of mental and moral development. His method in general seems to have been to analyze each subject into its simplest elements and to develop it by graded exercises based as far as possible upon the study of objects rather than words. He, of course, had to use words to explain so it can be said that he connected language with observation. In his school at Yverdon, language was taught by conversation concerning objects. This was carried out by beginning with single elements

or sounds, learned through syllables; from these, words were built up; and from words, sentences. Numbers were used to teach arithmetic just as words were used to teach language. The study of geography, nature, and history was carried on by connecting elements found in the locality with those found in the rest of the world. Music was also reduced to its simplest elements and developed. Religious training was given through the ordinary concrete relations and experiences of life.\(^\text{33}\)

From the following statement we can see the chief aim of education according to Pestalozzi:

Why have I insisted so strongly on attention to early physical and intellectual education? Because I consider these as merely leading to a higher aim, to qualify the human being for the free and full use of all the faculties implanted by the Creator, and to direct all these faculties towards the perfection of the whole being of man, that he may be enabled to act in his peculiar station as an instrument of that All-wise and Almighty Power that has called him into life.\(^\text{34}\)

Pestalozzi, unlike Comenius, Locke, Rousseau, and Basedow, failed to include a work in his school that can be compared to the work of industrial arts; however, this quotation was taken from Graves and has a particular significance:

Hence through Pestalozzi has gradually been strengthened the demand for universal popular education. Through his example at Neuhof and Stanz, and still more through the model institutions of this practical disciple, Fellenberg, at Hofwyl, various types of industrial education have come to supplement the academic courses, and extend the work of the school to a large number of pupils. The poor, the defective,
and the degraded have, through his efforts, been redeemed and given an opportunity in life, and many children have been kept in school that would inevitably have fallen by the wayside. Public schools, special industrial schools, orphanages, institutions for the deaf and blind, reformatories, and even prisons have thus yielded rich harvests because of his first sowing. Likewise, the tendency of modern society to care for the education of the unfortunate through industrial training has sprung from the philanthropic spirit of Pestalozzi and his endeavors to furnish educational opportunities for all.  

Pestalozzi's doctrines of method based on sense-perception, his moral and religious education, his love for education, and his emphasis on the educative value of mathematics and history place him as a forefather to almost all of Herbart's doctrines of education. It is common knowledge, however, that Pestalozzi was incomplete as well as inconsistent in his doctrines and methods and that Herbart, through his scientific approach, completely revised all the doctrines used by Pestalozzi, as will be seen in the following chapter.

CHAPTER IV

AN ANALYSIS OF THE PHILOSOPHY OF HERBART AND ITS
INFLUENCE ON LATER EDUCATION

In order to properly analyze the philosophy of Herbart, credit must be given to Pestalozzi for originating the psychological principles on which Herbart based his theories of education. The Swiss reformer succeeded in training his pupils to use their five senses.\(^1\) He did not, however, show how the knowledge which comes through the senses leads to a fuller understanding of new sense experience. This work was left for Herbart, and he accomplished it when he developed a general method for the presentation of any subject, thus greatly influencing pedagogy. This general method is spoken of as "the five formal steps": preparation, presentation, association, systematization, and application.\(^2\) According to the system, the teacher is to take the child carefully through each of these steps in teaching a new idea. Herbart's conception of education was training for personal character and social usefulness.\(^3\)

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Herbert's Ideas and Apperception Masses

To understand the educational principles of Herbert, it is first necessary to know something of his psychology and of the metaphysics lying back of it. With a possible exception, Herbert probably gave the first real system of education based upon a psychology. His psychological positions have now been almost entirely abandoned or reconstructed, but the founding of education upon psychology produced a marked advance in educational theory.

In Herbert's thought, psychology had a triple basis, — metaphysics, mathematics, and experience. Herbert's psychology was largely an outgrowth of self-examination. He believed that simple consciousness is built up of ideas. These ideas are about the same thing as our perception of objects and thoughts. The ideas result from the varying states into which the soul is thrown in endeavoring to maintain itself against external stimuli. The soul, according to Herbert, merely produces ideas from outside perceptions, and after producing, has nothing farther to do with the produced ideas. After being produced by the soul, the idea struggles to preserve itself in consciousness by its own dynamic force. While striving to preserve itself in consciousness the idea tends to draw other, almost static, ideas that are related to it from the

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subconscious mind up to the conscious in order to make itself more complete and whole.

While the original idea is drawing ideas from the subconscious it is constantly weeding out the least similar ideas and retaining the more similar. It is this constant interaction between ideas present at the same time in the conscious mind that the more similar ideas fuse or combine into a homogeneous whole, and become more powerful in their effort to remain in the conscious. The dissimilar ideas tend to compare, combine and form hostile ideas and each group tends to drive the other out. In other words, each new idea is tried, and rejected or retained, whichever is the most powerful of the ideas. This means that new ideas are interpreted through those already in consciousness.

Here Herbert developed his complete mechanics of ideas. On analyzing psychical tensions, or interest, in relation to physical forces, or stimuli, he worked out a system of near static ideas and dynamic ideas that could be quantitatively determined. This consisted of a group of mathematical equations that arranged mixed ideas and their development to thought in a series. This principle was called apperception by Herbert, and is the central doctrine in his whole educational system. In using this apperception Herbert believed the teacher could secure the interest and attention of the pupil to any idea or set of ideas and have him remember, or
retain it by making use of his body of related knowledge already contained in his subconscious mind.\textsuperscript{5}

From the above one may possibly assume that Herbert had the belief that an idea or percept ever going into the subconscious mind, which according to Herbert is the apperceptive mass, is never again forgotten. It may or may not ever be called up to the conscious mind but is actively waiting there to be called up when something related to it is perceived.

The Moral or Religious Aim of Education

According to Herbert's theories of apperception, the child's soul was largely in the hands of the teacher because the teacher could make or modify apperception masses, or groups of ideas. It was probably because of this control of the pupil's thoughts by his teachers that Herbert held that the aim of education should be to establish the moral life or character.\textsuperscript{6} His Outlines opens with the following statement:

The term 'virtue' expresses the whole purpose of education. Virtue is the idea of 'inner freedom,' which has developed into an abiding actuality in an individual. Whence, as inner freedom is a relation between 'insight' and 'volition,' a double task is at once set before the teacher. It becomes his business to make actual each one of these factors separately, in order that later a permanent relationship may result.\textsuperscript{7}

\textsuperscript{5}De Garmo, \textit{Herbart and the Herbartians}, pp. 26-46.

\textsuperscript{6}Johann Friedrich Herbart, \textit{The Science of Education} (Boston, 1896), pp. 103-109.

\textsuperscript{7}F. P. Graves, \textit{Great Educators of Three Centuries} (New York, 1912), p. 175.
From this statement it may be seen that virtue is attained by the pupil only when his conception of what is right and what is wrong is the same as his actions. The aim of education should be, therefore, to develop in the child an understanding of moral actions and a desire to express what he knows to be right in actions. The following statement by Herbart further expresses his thoughts on this matter:

And this all leads us back to the proposition—those only wield the full power of education, who know how to cultivate in the youthful soul a large circle of thought closely connected in all its parts, possessing the power of overcoming what is unfavourable in the environment, and of dissolving and absorbing into itself all that is favourable.8

Many-Sided Interest and the Historical and Scientific Studies

In Herbart's moral and religious aim of education it is clear that his idea of the end of education is the making of the morally religious man. This ultimate aim had to come through instruction, therefore, the first changes to be made in education lay in the field of psychology since learning takes place in the mind. He concluded, therefore, that the existing education during his time had not succeeded because it had a false psychological theory. He maintained that existing psychology was wrong in that it held to the theory that volition, or development of thought, took place in independent

8Herbart, op. cit., pp. 92-93.
faculties of the brain. His theory was that "volition has its root in thought, not indeed, in the details one know, but certainly in the combination and the total effect of the acquired ideas." According to this, his theory was to make a careful study of each pupil's thought masses, temperament, and mental capacity and processes, to determine how instruction could furnish a moral revelation of the world. There was not much likelihood that a child's virtuous ideas would develop if his studies did not interest him, therefore, his studies should be as broad as possible in order to expand his subconscious ideas by appealing to previous experiences of the student. This broad instruction would tend to open every avenue of approach to his ideas, interests, and will. As one of his great principles of education, Herbart put a great deal of emphasis upon interest as a means of realizing his aim in education. He wrote:

The word interest stands in general for that kind of mental activity which it is the business of instruction to incite. . . . He who lays hold of his information and reaches out for more takes an interest in it.  

Herbart believed that interests and ideas spring from two main sources, experience which furnishes man with a knowledge

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of nature, and social intercourse, from which come the sentiments toward his fellow man.\textsuperscript{11} Herbert listed and described six kinds of interest: empirical, speculative, aesthetic, sympathetic, social, and religious. He believed that instruction should contain the materials needed to arouse all of these interests in the individual.\textsuperscript{12}

To correspond with the two main groups of interest, Herbert divided all studies into two main branches,—the (1) 'historical', including history, literature, and languages; and (2) 'scientific', embracing mathematics and industrial training, as well as the natural sciences.\textsuperscript{13}

Correlation, Concentration, and the Culture Epochs

Herbert separated the subjects needed for a many-sided interest and classified them by themselves for convenience, but he emphasized the need for arranging these in the curriculum so that a unified and organic whole would be the result. This emphasis forecasted the importance Herbert placed on correlation, or the unification of studies, so common among his followers. The principle was further developed by later Herbertians under the name of concentration, or the unifying

\textsuperscript{11}Johann Friedrich Herbert, Outlines of Educational Doctrine (New York, 1904), p. 523.

\textsuperscript{12}McMurry, op. cit., p. 34.

\textsuperscript{13}Herbert, The Science of Education, pp. 188-189.
of all subjects about one central study, such as literature or history. But the selection and articulation of the subject-matter in such a way as to arouse many-sidedness and harmony is only hinted at by Herbert himself. He did recommend, however, that Homer's Odyssey should be the first work read, since this represents the interests and activities of the race while in its youth, and would appeal to the individual during the same stage. He also recommended following the Odyssey with the Iliad, the Philoctetes of Sophocles, the histories of Xenophon, Plato's dialogues, and other classics, in order of the growing complexity of racial interest depicted in them.\textsuperscript{14} This tentative endeavor of Herbert in the selection of material for the course of study to parallel the development of the individual with that of the race, was also continued and enlarged by the disciples of Herbert. This became definite and fixed in the culture epoch theory formulated by Ziller and others.\textsuperscript{15}

Absorption and Reflection and the Formal Steps of Instruction

In order to correlate and systematize this broad range of material Herbert saw the need to formulate a method of instructing the child. To make this plan, or method, conform to the development and working of the human mind, he introduced

\textsuperscript{14}Herbert, The Science of Education, pp. 91 and 168.

\textsuperscript{15}Ibid., p. 188.
his distinction between absorption and reflection. Absorption means giving oneself up to the acquisition of, and considering with attention, facts or ideas. Reflection means the development to thought, or unification of ideas into a homogeneous whole, of the knowledge already gained through absorption. He held that these two processes were distinct and separate, but that through the development of thought absorption passed into reflection. On the basis of this mental activity and growth, Herbart gave four steps by which they might be carried out. These may be seen from this statement by Herbart:

Upon this depends the articulation of instruction. The larger members are composed of smaller, as are the lesser of the least. In each of the smallest members, four stages of instruction are to be distinguished: it must provide for Clearness, Association, Arrangement, and the Course of this order. These grades, which with the smallest members quickly succeed each other, follow one another more slowly, when those next in comprehensiveness are formed from the smallest members, and with ever-increasing spaces of time, as higher steps of reflection have to be climbed.\(^\text{16}\)

This system was later modified by Herbart's followers, because they felt that on the principle of apperception, the pupil must first be made conscious of his existing stock of ideas in so far as they are similar to the material to be presented. They held that this could be accomplished by a review of preceding lessons or by an outline of what is to be undertaken. From this, Ziller, a noted disciple of Herbart, divided the step of clearness into preparation and

\(^{16}\text{Tbid., p. 145.}\)
presentation. A more recent Herbartian, Rein, added aim as a sub-step to preparation. With these, the other three processes were changed by later Herbartians until the five became preparation, presentation, comparison and abstraction, generalization, and application.¹⁷

**Government and Training in Discipline**

The very simplest purpose of government in Herbart's theory was to hold the pupils in order so as to render them submissive to the will of the teacher until their moral habits could be formed. He believed government should keep the children properly occupied and supervised, and should issue prohibitions and commands, rewards and punishments. He further believed that pupils could be over-governed and under-trained.¹⁸ His belief was that training should tend to shape the will for self-control. Training, therefore, would be the parent of voluntary cooperation, and should be the aim of schoolroom discipline. It would unite with educative instruction to form character. The following is a statement by Herbart making this clear:

> At this point, we can judge what discipline may be to education. All changes of feeling the pupil must suffer, are only necessary transitions to determinations of the circle of thought, or of character. And thus the relation of discipline to formation of character is twofold—indirect and direct. It partly

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helps to make that instruction possible, which will influence the subsequent formation of the character of the future independent man, is partly a means even now to create, or not to create, through action or inaction, as the case may be, a beginning of character.19

Influence of Herbart in Germany

Herbart had very little experience as a teacher, as has already been shown, and as a result of this his theoretical foundations were mostly in outline form. His followers, however, were able to fill in and extend his work. In Germany they translated his theories to practice and then applied them in elementary and secondary schools. Karl Volkmar Stoy, a student of Herbart at Gottingen, established a school at Jena, Germany, in which he held closely to the original form of Herbart's theories.20 Tuiskon Ziller, a gymnasium teacher and professor at Leipzig, Germany, gave a freer interpretation, than did Stoy.21 Ziller did a lot to bring Herbartianism into prominence when he wrote, The Basis of the Doctrine of Educative Instruction. This work by Ziller resulted in the formation of a society known as the Association for the Scientific Study of Education which spread throughout Germany. Ziller worked out a course of study for an eight-year elementary school which was centered around fairy tales, Robinson Crusoe.

20De Carmo, Herbart and the Herbartians, p. 180.
21Ibid., pp. 103-106.
and selections from the Old and New Testaments. These were worked out to correspond with the mental level of the child. Ziller, as has previously been explained, changed the formal stages of instruction given by Herbart.

Other Germans who influenced Herbartianism were Karl Lange, Wilhelm Rein, and Otto Frick. Lange had the theory that all learning is apperceiving. He agreed with Herbart in general, but warned against his mechanics and formalism. Wilhelm Rein succeeded Karl Stoy at Jena. He coordinated other materials with the curriculum centered around history in which Herbart believed. Frick, as a director of an institute in Halle, Germany, was an advocate of Stoy’s principles who gained recognition through applying Herbartianism to secondary schools.

Many other educators in Germany further adapted the doctrines of Herbart to the school even though their theories sometimes differed.

Herbart’s Influence in the United States

The United States has been influenced more by Herbartianism than any other country other than Germany. This

22Graves, op. cit., pp. 188-189.

23De Garmo, Lange’s Apperception (Boston, 1903), pp. 237-238.


Herbartian influence, for the most part, came to the United States through American teachers who took their doctor's degree in Germany. This may be seen from this statement taken from the **Educational Review**:

One need have no fear in saying that the methods of Froebel and the ideals of Herbart are as fully realized and as successfully practiced in America as anywhere in the world, not in the German way, but according to a spirit which belongs to American civilization and life. The pioneer students in Europe have brought back the methods of instruction in which they were trained; so that the present generation of students have something with which to start.  

In 1892 the National Herbart Society was founded to extend the scope of Herbart's principles and adapt them to American conditions. The Association started immediately to translate the works of Herbart and various German Herbartians. In 1895 a regular yearbook was started by the Association.  

Charles De Garmo, onetime professor of education at Cornell University, was the first president and editor of the Herbart Society. Through its publications, he increased the popularity of Herbartian principles. He also used these principles as the basis for his textbooks. Two of the most outstanding men considered as Herbartians were Charles and Frank McMurry. Charles McMurry, at the Illinois State Normal University, and Frank, at the Columbia University Teachers College, did a

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great deal to popularize Herbartianism through books and articles.

Many men who hardly considered themselves Herbartians undertook to change Herbart's principles. Two such men were Francis W. Parker and Wilbur S. Jackman. These two men tried to modify Herbart's principles of correlation and concentration. To do this one attempted to center a course of study around a hierarchy of natural sciences, and the other attempted a correlation of science and history.28

It has been through these methods just mentioned that elementary, and to some extent, secondary, education has been affected. Herbartianism has been almost completely abandoned, but its best influence on American education is something that cannot be denied.

In the following chapter a summary of Herbart's theories will be compared to the survey of industrial arts in such a way as to establish an answer to the question: Would the industrial arts add to the philosophy of Herbart?

CHAPTER V

A COMPARISON OF THE WORK OF INDUSTRIAL ARTS
AND THE THEORIES OF HERBART

To properly survey the work of industrial arts in order to make a comparison with the educational theories of Herbart, something about the development, definitions, and objectives of industrial arts will be treated.

Development of Industrial Arts

Some type of industrial arts has gone on in the world since the beginning of man; however, the Industrial Revolution gave it its greatest impetus. During the early part of the Nineteenth Century, while Pestalozzi was establishing his "object method" of teaching, a great industrial revolution was going on in Europe. "Mechanics institutes" and "industrial lyceums" began to flourish under philanthropic leadership, because the general need for more mechanical and scientific knowledge on the part of all potential workers was so great. They were especially prevalent in England and America. Manual labor schools became common in the eastern part of the United States over one hundred years ago. During the Nineteenth Century, in France and England, the desire for scientific and
industrial supremacy caused these countries to establish many technical schools.¹

As various countries gradually became aware of the general public need for technical information and training, emphasis shifted and such work was introduced as a part of the general education. Home Craft (Hus Sloyd) had, for a long time, been the vogue in Sweden, with results that are evident even today. It was natural that Della Vos, of Russia, at the Centennial Exposition in Philadelphia in 1876 should arouse the interest of American School people with his exhibit of objects and exercises made in the Imperial Technical School of Moscow.²

Dewey stressed, almost forty years ago, the fact that people learn through doing or activity. In this he echoes the voices of Plato, Comenius, Rousseau, Pestalozzi, and Froebel.³ Hardin says, that the industrial arts derived much of its philosophy of method from his philosophy as applied to the elementary school and kindergarten.⁴ In School and Society Dewey said that "we must conceive of work in wood and metal,


²Ibid.


of weaving, sewing, and cooking, as methods of life; not as
distinct studies.\textsuperscript{5}

In another paragraph he says:

In educational terms, this means that these occupa-
pations in the school shall not be mere practical
devices or modes of routine employment, the gaining of
better technical skill as cooks, seamstresses, or car-
penters, but active centers of insight into natural
materials and processes, points of departure whence
children shall be led into a realization of the his-
torical development of man.\textsuperscript{6}

Historically, industrial arts has passed through two
somewhat well-defined periods of professional growth and is
now in the third. The first was named "manual training" by
Hunkle in 1877, and the emphasis was on hand skill. The sec-
ond period of development was named "manual arts" by Bennett
in 1894, and the philosophy was extended to include the making
of both useful and well-designed articles, essentially by
hand. The influence of industry brought about the third per-
iod, which was referred to by Richards, Russell, Bonser, and
others as "industrial arts." Diversity of skills rather than
specialization was accentuated in this latter concept.

Bonser's early definition, "Industrial Arts is a study of
the changes made by man in the forms of materials to increase
their value, and of the problems of life related to these

\textsuperscript{5}U. S. Office of Education, quoting J. Dewey, op. cit.,
p. 13.

\textsuperscript{6}Ibid.
changes," was just a modern interpretation of the aims of general education.7

Definitions of Industrial Arts

Although definitions are diverse, present day interpretations of the term "industrial arts" vary but little. Friese has said:

Industrial Arts is a varying but representative group of handicraft and industrial machine experiences offered so as to develop the needed general industrial knowledge of all boys (and in modified form for girls) in the complex and changing occupational-economic-social-political order of America.8

Maximillian Komow gives the following definition that perhaps describes the aims of industrial arts in our general education program more clearly than any other:

Industrial Arts aims to provide the boys and girls with the opportunity to acquire an appreciation and understanding of our fundamental industries and their relationship to our democratic way of life. It aims to provide experiences which will prepare the individual through his knowledges and skills, attitudes and accomplishments to be more useful as a member of his home and community, more appreciative and more intelligent as a consumer, and more valuable as a citizen.9

Industrial arts education is a phase of general education, designed to develop certain habits, attitudes, and


8J. F. Friese, "Philosophy of Industrial Arts for American Education," Industrial Arts and Vocational Education, XXIX (January, 1940), 2.

9Maximillian Komow, "Relation of Industrial Arts Education to Vocational Education," High Points, XXXIV (April, 1952), 40.
abilities desirable for all citizens of an industrial civilization regardless of their vocations. It helps to make persons intelligent consumers by giving them a limited contact with, and some information about, tools, processes, materials, design and life problems, but it does not aim directly to impart vocational proficiency.\textsuperscript{10}

A school shop must have three essentials—skill, knowledge, and attitude if it is to function properly. From reverence for skill grows the desire to be skillful. As a skill develops, knowledge also develops, "for skill—after all—is wisdom in action."\textsuperscript{11}

Skill is a relative term and one does not expect to develop it to a high degree in industrial arts work; however, skill should be developed enough to give some confidence in the use of tools.

The student should realize that the unaided hand is wholly incapable of doing the work of the world, and that he increases his power with the increase in his ability to use tools and machines. To know how to do a thing is the first step in the development of skill; to be able to do it efficiently is skill.\textsuperscript{12}

In helping to develop these skills, a teacher of industrial arts should realize that his major purpose should be to

\begin{flushright}
\textsuperscript{10}F. Theodore Struck, Foundations of Industrial Education (New York, 1930), pp. 36-38.
\textsuperscript{11}James McKenny, "Outsider Looks In," Industrial Arts and Vocational Education, XL (February, 1952), 38.
\textsuperscript{12}R. W. Selvidge and Verne C. Fryklund, Principles of Trade and Industrial Teaching (Peoria, 1930), p. 47.
\end{flushright}
teach so that his pupils will form the habit of achieving
whatever they set out to accomplish. In doing this, they will
come increasingly to maintain high standards of achievement.13

The very heart of Industrial Arts lies in the
opportunity for the boy himself to participate in
the activities of doing, making, and manipulating
tools and materials. The importance of maintaining
a certain necessary relationship with the world of
things as they are outside the school must be
stressed.14

Objectives for Industrial Arts

When interpreting a philosophy, definitions are sufficient
only when they are expanded into a set of objectives. With
this in mind the definitions that have been given will be ex-
panded into objectives. For this purpose the objectives of
Friece and Komow will suffice.

Friece fulfills his definitions of industrial arts by
giving the following objectives:

1. Learning and developmental experiences in
Industrial Arts, through types of experience not other-
wise available, are essential in the complete social
education of every boy in a dominantly industrial
democracy.

2. The Industrial Arts constitutes a group of
social experiences which embrace the most fundamental
procedure in education; namely, through a combination
of seeing, hearing, thinking, and doing.

3. Industrial Arts is a convenient and natural
agency for educational correlation.

13A. B. Mays, "Maintaining High Standards of Achievement
in Industrial Arts," Industrial Arts and Vocational Education,
XL (February, 1952), 33-35.

14Dean M. Schweikhard, "Keeping Industrial Arts Abreast
with Changing Industry," American Vocational Association News
4. The vehicle of learning, the problem, job, or educational project is the physical expression of the pupil's educative experiences and growth.

5. Industrial Arts provides a ready avenue for self-expression for large numbers of persons who find many other avenues for such experiences closed.

6. Industrial Arts is fundamentally and naturally child centered in its concepts and in its practice of methods, subject matter, and control.

7. Some phases of Industrial Arts are applicable to girls as well as boys.  

The relation of the objectives of general education and those of industrial arts is explained by this statement from Bryn:

A careful examination of the objectives of general education and of those in the industrial arts suggests that there is no conflict in the ideals set forth, and that legitimate and desirable objectives for general education are also legitimate and desirable for the industrial arts.

Komow fulfills his definition of industrial arts with the following set of objectives:

1. To afford an opportunity to explore, develop, and evaluate special interests which may serve to influence a pupil's choice of further education.

2. To acquire a basic knowledge of the materials, tools, and the processes of modern industry.

3. To acquaint pupils with occupational information and the history of the development of industry.

4. To develop intelligent consumer attitudes.

5. To develop democratic living through shop environment and activities.

6. To develop a sympathetic understanding of, and respect for, manual labor.

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\[15\] Friese, op. cit., pp. 2-5.


\[17\] Komow, op. cit., p. 42.
The Comparison of the Work of Industrial Arts with that of Herbart

In showing if the industrial arts would have added to the theories of Herbart, it will be assumed that it would have added if any part or parts of the two fields are similar or if they attempt to accomplish the same purposes. It will be assumed that industrial arts does not add to his theories if the opposite is true in the most important parts of Herbart's theory.

Aim of Education

As will be seen at the opening of Chapter IV, Herbart's conception of education was training for personal character and social usefulness.

The most important objective mentioned in this survey of industrial arts is improved attitude. Attitude is stressed as an important factor in the properly managed shop by Komow, Struck, and McKenny, in their definitions of industrial arts. In the objectives of industrial arts Komow lists attitude again. Other important purposes directly mentioned by industrial arts thinkers and present in a good industrial arts program are desirable habits, self-confidence, self-expression, and an opportunity to develop special interests.

The other half of Herbart's conception of education, social usefulness, is fulfilled by industrial arts, according to the following statements by thinkers on industrial arts:
1. It aims to provide experiences which will prepare the individual through his knowledges and skills, attitudes and accomplishments to be more useful as a member of his home and community, more appreciative and more intelligent as a consumer, and more valuable as a citizen.\textsuperscript{18}

2. Learning and developmental experiences in Industrial Arts, through types of experience not otherwise available, are essential in the complete social education of every boy in a dominantly industrial democracy.\textsuperscript{19}

3. The Industrial Arts constitutes a group of social experiences which embrace the most fundamental procedure in education; namely, through a combination of seeing, hearing, thinking, and doing.\textsuperscript{20}

4. To develop democratic living through shop environment and activities.\textsuperscript{21}

5. To develop a sympathetic understanding of, and respect for, manual labor.\textsuperscript{22}

\textbf{Many-Sided Interest and Historical and Scientific Studies}

As one of the chief means of realizing his aim of education Herbert put a great deal of emphasis on interest. Herbert believed interest comes from two main sources. These are: (1) Experience which furnishes us with a knowledge of nature. (2) Social intercourse, from which come the sentiments toward our fellow men.\textsuperscript{23}

\textsuperscript{18}Kormow, op. cit., p. 40. \textsuperscript{19}Fries, op. cit., pp. 2-5.
\textsuperscript{20}Ibid. \textsuperscript{21}Kormow, op. cit., p. 42.
\textsuperscript{22}Ibid.
\textsuperscript{23}Johann Friedrich Herbert, Outlines of Educational Doctrine (New York, 1904), p. 523.
In using materials for construction in the shop the industrial arts student gains a knowledge of natural materials, especially wood. Dewey placed emphasis on the above thought when he gave the following statement in a paragraph already quoted:

In educational terms, this means that these occupations in the school shall not be mere practical devices... of... employment or the gaining of... skill as cooks, seamstresses, or carpentry, but active centers of insight into natural materials and processes... 24

Social intercourse which leads to sentiments toward fellow men, as described by Herbart, is also present in the industrial arts program. The presence of experiences toward this end may be seen from these objectives. Friese says:

The Industrial Arts constitutes a group of social experiences which embrace the most fundamental procedure in education; namely, through a combination of seeing, hearing, thinking, and doing. 25

Komow gives, "To develop a sympathetic understanding of, and respect for, manual labor," as one of his objectives for industrial arts. 26

Correlation, Concentration, and the Culture Epochs

In providing for correlation, concentration, and culture, Herbart first emphasized the need for the arrangement


of the curriculum so that a unified and organic whole would result. Along the line of correlation, Friesa said: "Industrial Arts is a convenient and natural agency for educational correlation." 27

In line with Herbert's culture epoch, "the selection of material for the course of study to parallel the development of the individual with that of the race," industrial arts fills the need the child has for knowledge of the industrial society, since our society is now in an era of industrialization.

Absorption and Reflection and the Formal Steps of Instruction

Friesa's statement, "The vehicle of learning, the problem, job, or educational project is the physical expression of the pupil's educative experiences and growth," closely parallels Herbert's ideas of reflection which means the development to thought. The parallelism may be seen from this statement taken from the chapter on Herbert:

Reflection means the development to thought, or unification of ideas into a homogeneous whole, of the knowledge already gained through absorption.

On the basis of this mental activity and growth, Herbert gave four steps to carry out his theories. In simple terms, Herbert believed reflection, or development to thought, was mental growth and that it took place by systematically arranging former percepts the child had gained so as to guide

27 Friesa, op. cit., pp. 2-5.
the pupil's thinking in adding like percepts together to a constructive end. Industrial arts achieves the same end by adding to the child's percepts with numerous new percepts. Some of these percepts mentioned by industrial arts thinkers are, activities of doing, making, and manipulating tools and materials; learning and developmental experiences; social experiences through a combination of seeing, hearing, thinking and doing; and acquisition of the basic knowledge of the materials, tools, and the processes of modern industry.

The above are just a few of the sources of percepts available to the industrial arts student. The five senses, which according to Herbert are the only means by which one adds new percepts, are all utilized in a good general shop program. In a general shop program, for example, the sense of sight might be used in this way: to add percepts from demonstrations, similar objects, and written instructions or plans until enough ideas are present in the student's apperceptive mass to cause him to choose, and develop, a project to fit his own interests. In achieving what he sets out to accomplish, the student must take his project through the stages of planning, fabricating, and finishing. According to Herbert, if thought is developed in this manner and the end result fits the needs of the child in his society, as the example above does, then the child is gaining knowledge. This
gain in knowledge according to Herbart is apperception which is the central doctrine in his educational theories.

From these percepts that industrial arts adds to the pupil's subconscious mind, according to Herbart's theories, it seems logical to assume that industrial arts would have been a definite addition to Herbart's curriculum and that it would have made his theories more satisfactory and far-reaching. It would have added certain percepts, and added them in such a way as to achieve most of the results Herbart has described in his philosophy of education.
CHAPTER VI

SUMMARY AND CONCLUSIONS

Herbart had a remarkable degree of intellectual energy and insight into the human mind which he began displaying at a very early age. He lived during an age when the accepted pedagogical theories came from great educators such as Comenius, Locke, Rousseau, and Pestalozzi, who allowed themselves to be governed more by their instincts and feelings rather than by logical deduction. This, however, did not affect Herbart to a great degree, for he broke away from their educational theories and advanced his own theories. From the standpoint of a new psychology based on metaphysics, science, and mathematics, Herbart elaborated a rational and scientific system of pedagogy.

Herbart's influence was felt in the United States as well as in Germany when his theories had been turned into practice. In Germany his influence spread through the efforts of such men as Karl Volkmar Stoy, Tuiskon Ziller, Karl Lange, Wilhelm Rein, Otto Frick and others. These men were influenced by Herbart's theories of pedagogy and translated them to practice by applying them to the school systems of Germany. Herbart had very little opportunity to apply his theories to practice because most of his life was spent lecturing and writing.
Americans brought Herbartianism to the United States when they returned from taking their doctor's degree in Germany. Charles, Frank, and Dorothy McMurry and Charles De Garmo, of the old Illinois State Normal University, were among the more important of the students who brought Herbartianism back to the United States. At that time in America the theory of the apperceptive mass and the philosophy and teachings of Herbart were accepted almost completely by some teacher training institutions. The Illinois State Normal University, where the three McMurry's and De Garmo taught, was one such institution. It was at one time called the "hot bed" of Herbartianism. The above institution was the first teacher training institution in Illinois, and one of the first in the United States, to introduce "manual training," as it was called at that time.

Elementary education, and to some extent secondary education, has been greatly affected by Herbartian theories. His theories like others have been almost completely abandoned, yet his vast influence on our educational system cannot be denied. Educators in Germany and the United States popularized Herbartianism through their advertisement in writings and practices. Men who could not even be considered as Herbartians used and modified his principles.

From this great influence one must assume, therefore, that many of his theories could be applied to the educational system today. It is also assumed that from the preceding
chapter information on both the philosophy of Herbart and the work of industrial arts have been compared and that industrial arts as well as other parts of the general educational program would have added to his doctrines by achieving the aims in which he believed.

In concluding, one might say that if Herbart had lived today he would have included in his principles and doctrines a course of study closely related to industrial arts. He would have done this in order to give his students the opportunity to develop the knowledge needed in the complex and changing occupational-economic-social-political order of America.
BIBLIOGRAPHY

Books


**Articles**


Friese, J. F., "Philosophy of Industrial Arts for American Education," *Industrial Arts and Vocational Education*, XXIX (January, 1940), 1-5.


Kemow, Maximillian, "The Relation of Industrial Education to Vocational Industrial Education," *High Points*, XXXIV (April, 1952), 40-46.

McKenny, James, "Outsider Looks In," Industrial Arts and Vocational Education, XLI (February, 1952), 38-42.


Reports


Cole, Percival Richard, Herbert and Froebel, Contributions to Education No. 14, New York, Bureau of Publications, Teachers College Columbia University, 1907, pp. 43-44.

Committee on Social-Economic Goals, Frederick J. Kelly, Chairman, "Desirable Social-Economic Goals for America," Journal of the National Education Association, XXIII January, 1934), 1.

MacVannel, John Angus, The Educational Theories of Herbert and Froebel, Contributions to Education No. 4, New York, Bureau of Publications, Teachers College Columbia University, 1905.

McMurry, Dorothy, Herbartian Contributions to History Instruction in American Elementary Schools, Contributions to Education No. 920, New York, Bureau of Publications, Teachers College Columbia University, 1906.


Others

Blackburn, S. A., in lecture, Director of Industrial Arts, North Texas State College, Denton, Texas, Spring, 1952.